Water Gremlin Company

Please find attached the comments of Water Gremlin Company on Draft Permit No. 12300341-101, along with Exhibits 1-6 to our comments. Due to file upload limitations, Exhibits 2-4 are combined into a single PDF.

Exhibit 2

EXHIBIT 2
Spreadsheet Summary of Water Gremlin Key Comments on Permit and Status of Resolution dated August 19, 2022

Page	Reference to Permit Section	Original Draft Permit Text Provided by MPCA in April 2022	Water Gremlin Comment	July 2022 Preliminary Draft Permit Text	Resolved?
5	Facility description	The facility manufactures lead (Pb) metal products fabricated using refined material purchased from local recycling facilities. Battery terminal posts are the primary product and account for the majority of production at the facility. Other fabricated products include lead and tin sinker weights for fishing applications, and lead components for ammunition. Following fabrication, battery terminal posts are treated with a coating to protect lead products from corrosion during shipping.	The facility manufactures lead (Pb) metal products fabricated using refined material purchased from recycling facilities. Battery terminal posts are the primary product and account for the majority of production at the facility. Other fabricated products include lead and tin sinker weights for fishing applications, and lead components for ammunition. Following fabrication, some battery terminal posts are treated with a coating to protect lead products from corrosion or improve fit with other battery components.	The facility manufactures lead metal products fabricated using refined material purchased from recycling facilities. The facility produces battery terminal posts for automotive, marine and other consumer, commercial, governmental, and military vehicles and equipment. Other fabricated products include lead and tin sinker weights for recreational fishing applications, and lead components for governmental, commercial, recreational and personal munitions. Following fabrication, some battery terminal posts are treated with a coating to protect the products from corrosion or to improve fit with other components.	Yes
5	Description of Permit Additions	Incorporation of the Stipulation Agreement (Agreement) and Administrative Order (Order). The permit incorporates specific provisions from the Agreement, executed March 1, 2019, and Order, signed January 17, 2020, which are to be continued into the permit term.	Terminate the Agreement and Order and delete this paragraph. The air permit contains all the necessary requirements from these documents.	These documents are not terminated with the issuance of Permit No. 12300341-101.	No
5	Description of Permit Additions	The Agreement required an air emissions risk analysis (AERA) and dispersion model to determine the health risks of t-DCE and lead emissions from the facility.	The 2019 Stipulation Agreement did not have a requirement to do an AERA or air dispersion model.		No
5	Description of Permit Additions	Addition of continuous emissions monitoring system (CEMS) in the battery terminal post coater stack. The permit includes a VOC CEMS in the battery terminal post coater stack (STRU 73). This was required temporarily by the Agreement to monitor the occurrence of emissions from the coaters and quantify the amount of t-DCE (VOC) leaving the coaters to verify compliance with solvent use limits required by the Agreement. Permanent operation and maintenance of a VOC CEMS, record keeping of CEM results and CEM correlation validation is required by the permit as a supplement to the main compliance determination method of record keeping of daily material usage. Other supplemental requirements include quarterly VOC solvent inventory audits, and reporting.	Remove the CEMS requirement for STRU73. It does not provide sound data and is redundant to the tracking and inventory requirements.	Addition of continuous emissions monitoring system (CEMS) in the battery terminal post coater stack. The permit includes a VOC CEMS in the battery terminal post coater stack (STRU 73). This was required temporarily by the Agreement to monitor the occurrence of emissions from the coaters and quantify the amount of t-DCE (as VOC)leaving the coaters to verify compliance with solvent use limits required by the Agreement. Permanent operation and maintenance of a VOC CEMS, record keeping of CEM results and CEM correlation validation is required by the permit as a supplement to the main compliance determination method of record keeping of daily material usage.	No
6	Description of Permit Additions	Addition of solvent vapor remediation system. The permit includes the addition of the sub-slab depressurization and solvent vapor extraction system with associated GAC canister control equipment to capture existing (and future) sub-slab solvent vapor contamination identified during the remedial investigation. The permit includes limits on emissions of target chlorinated compounds, operation, monitoring, recordkeeping, and reporting requirements.	Remove the vapor remediation system requirements. They are not necessary for compliance with air thresholds.	Addition of solvent vapor remediation system. The permit includes the addition of the sub-slab depressurization and solvent vapor extraction system with associated GAC canister control equipment to capture existing (and future) sub-slab solvent vapor contamination identified during the remedial investigation. The permit includes limits on emissions of target chlorinated compounds, operation, monitoring, recordkeeping, and reporting requirements.	No
6	Description of Permit Additions	Addition of ambient monitors for PM10, PM2.5, and VOCs. Operation of approved ambient air VOC monitors required by the Agreement are to be operated for at least two years following permit issuance to ensure t-DCE emissions remain below health risk benchmarks at all times. Conditions that must be met to discontinue VOC monitoring are also specified. In addition, the permit requires ambient monitoring for PM10 and PM2.5 to demonstrate compliance with applicable NAAQS for at least three years following permit issuance, including conditions in which the facility may discontinue PM10 and PM2.5 monitoring. The facility is responsible for managing each monitor's operation, maintenance, recordkeeping, and reporting of results as described later in this permit.	Remove ambient monitor requirements. They are unnecessary for both VOCs and PM given the compliant modeling. MPCA had already agreed to forego the PM monitors.	Addition of ambient monitors for VOCs with speciation for t-DCE and other VOCs. Operation of approved ambient air VOC monitors required by the Agreement are to be operated for at least two years following permit issuance to ensure t-DCE emissions remain below health risk benchmarks at all times. Conditions that must be met to discontinue VOC monitoring are also specified. The facility is responsible for managing each monitor's operation, maintenance, recordkeeping, and reporting of results as described later in this permit.	No
6	Description of Permit Additions	The permit requires a minimum negative pressure differential be maintained and continuous monitoring of coating room pressure and alarms (audible and visual) that alert when coating room pressure is above the set point established by 40 CFR pt. 63, subp. MMMM. The permit also requires daily inspection of enclosure integrity, annual testing of the enclosure to ensure it meets the definition described above following EPA Method 204 in Appendix M of 40 CFR Part 51, and maintenance of coating room floor sealant to avoid further sub-slab contamination due to vapor intrusion or spills.	The facility is not subject to 40 CFR 63 subp. MMMM and should not be required to meet the standards of that NESHAP. Annual testing of the total enclosure should be replaced with testing every 5 years.	The permit also requires daily inspection of enclosure integrity, annual testing of the enclosure to ensure it meets the definition described above following EPA Method 204 in Appendix M of 40 CFR Part 51, and maintenance of coating room floor sealant to avoid further sub-slab contamination due to vapor intrusion or spills.	No
8	Summary of subject items	COMG 5	Remove EQUIs 85, 89, 92, 97, and 117 as these are water-based dip/drip coaters.	EQUI 117 (South building) was removed from the list, but the others remain	No
25	5.1.37	Updated AERA Triggers (AERA Required): Any changes that affect 1,2-(trans-) Dichloroethylene, lead, and other air toxics parameter or emission rate listed in Appendix C, or an addition to the information documented in Appendix C, trigger the Updated AERA Submittal requirement. This includes changes that do not require a permit amendment as well as changes that require any type of permit amendment. Changes made under the Administrative amendment process are excluded from this requirement	Updated AERA is not required under MN rules. Evaluation of potential adverse health impacts can be accomplished with RASS resubmittal or would not be necessary based on previously established compliance margin.	5.1.38: Updated AERA Triggers (AERA Required): Any changes that affect 1,2-(trans-) Dichloroethylene, lead, and other air toxics parameter or emission rate listed in Appendix C, or an addition to the information documented in Appendix C, or the health benchmarks for any of the evaluated chemical of concern have changed to more strict values, or there are new health benchmark values for chemicals of concern used at the facility, trigger the Updated AERA Submittal requirement. This includes changes that do not require a permit amendment as well as changes that require any type of permit amendment. The updated AERA results must demonstrate compliance with the health benchmarks for the modeled pollutants. The schedule for the revised AERA submittal is defined elsewhere in this permit. Changes made under the Administrative amendment process are excluded from this requirement.	No

26	5.1.45	Prior to conducting the AERA analysis, the Permittee shall use the current version of the MPCA Air Dispersion Modeling Guidance to determine if the Baseline AERA (the most recent AERA demonstration) is outdated .	This is a vague requirement. What constitutes "outdated"?	"outdated" language remains	No
27	unnumbered	The Permittee shall conduct VOC and TO-15 Ambient Air Monitoring due before Permit Issuance Date. Ambient air monitoring shall be conducted in accordance with the MPCA-approved VOC ambient air monitoring plan in the Administrative Order dated January 17, 2020<> and included in this permit as Appendix F . F. This monitoring plan shall continue until the time the MPCA approves a revised ambient monitoring plan protocol. The permittee shall compile 24 hour VOC and TO-15 monitoring results by the last day of each month for the previous monitoring month. The results shall be reported to AQRoutineReport.PCA.state.mn.us and made available to MPCA at any other time. [Minn. R. 7007.0800, subp. 2, Minn. R. 7009.0010-7009.0090, Minn. Stat. 116.07, subds. 4a(a) & 9(2)]	Ambient monitoring should be discontinued. The facility has years of data representing operating conditions sufficient to validate the facility's tracking spreadsheet. Ambient monitoring leaves the possibility for effects from non-Water Gremlin sources and confusing results, as the monitor results vary not only with solvent usage but with meteorology and outside influences.	5.1.56: revised language. The Permittee shall conduct VOC and TO-15 Ambient Air Monitoring due within 30 days following approval of revised ambient air monitoring plan. Ambient air monitoring shall be conducted in accordance with the MPCA-approved Revised VOC ambient air monitoring plan. The VOC and TO-15 ambient monitoring may not be interrupted during the transition of ambient monitoring to the revised plan.	No
27	5.1.52	The Permittee shall compile 24 hour VOC and TO-15 monitoring results by the last day of each month for the previous monitored month. The results shall be reported to AQRoutineReport.PCA@state.mn.us as required elsewhere in the permit, and made available at any other time to MPCA upon request.	Strike this requirement: WG has 3 years of ambient VOC data monitoring already.	5.1.53, language remains. The Permittee shall continue to conduct VOC and TO-15 Ambient Air Monitoring that was required my MPCA before issuance of Permit No. 12300341-101. Ambient air monitoring shall be conducted in accordance with the MPCA-approved VOC ambient air monitoring plan in the Administrative Order dated January 17, 2020, and included in this permit as Appendix F. This monitoring plan shall continue until the time the MPCA approves a revised ambient monitoring plan. The permittee shall compile 24- hour VOC and TO-15 monitoring results by the last day of each month for the previous monitoring month. The results shall be reported to AQRoutineReport.PCA.state.mn.us and made available to MPCA at any other time.	No
27	5.1.56	Discontinuation of VOC Ambient Air Monitoring: The Permittee shall operate and maintain the VOC ambient air monitoring network according to the Ambient Air Monitoring Plan until the Commissioner determines that the following criteria have been met: 1) Two years of ambient air monitoring is conducted pursuant to the Ambient Air Monitoring Plan approved by MPCA and implemented as prescribed elsewhere in this permit; 2) There are no violations of the permit or operations shut down within the two year monitoring period; 3) The facility's 1,2-(trans-) Dichloroethylene emissions are at least 80 percent of the permitted limit during the ambient air monitoring period; 4) The probability of future long-term average 1,2-(trans-) Dichloroethylene concentrations being above health guidelines is less than 5 percent. The Permittee shall test this requirement by calculating a 95 percent upper confidence limit for the mean concentration at each monitoring site and compare the highest 95 percent upper confidence limit to 80 percent of the health benchmark for 1,2-(trans-)Dichloroethylene, as adapted from EPA Ambient Air Monitoring Network Assessment Guidance (Section 4.1). If the calculated 95 percent upper confidence limit is below 80 percent of the inhalation health benchmark for 1,2-(trans-) Dichloroethylene, ambient air monitoring may be discontinued if all other criteria are met; and 5) The permit remains in place with emission limits that result in modeled concentrations below inhalation health benchmarks. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]	These requirements are senseless. WG should not be required to use higher levels of T-DCE. Existing usage data shows the conditions are already being met (coating usage and ambient data). Also, the derivation of the TDCE RAA is suspect, the RAA is not a promulgated standard, and even if 20ug/m3 was the correct chronic threshold, the subchronic threshold of 200ug/m3 would be the applicable standard for this permit term. Water Gremlin has already provided 3 years of ambient air data. The requirement not to have violations of the permit is vague and unworkable. What constitutes a violation of the permit? Any deviation? It is counter-intuitive to require a high level of emissions, especially when the facility has a long-term plan to increase UV coating and reduce solvent usage. The health benchmark of 20 ug/m3 was improperly derived and applied to a shorter-than-chronic exposure duration.	5.1.57: Discontinuation of VOC Ambient Air Monitoring: The Permittee shall operate and maintain the VOC ambient air monitoring network according to the MPCA approved Ambient Air Monitoring Plan until the Commissioner determines that the following criteria have been met: 1) Twenty four months of ambient air monitoring is conducted pursuant to the Ambient Air Monitoring Plan approved by MPCA and implemented as prescribed elsewhere in this permit; 2) The twenty four months of ambient monitoring shall exclude periods when Water Gremlins shuts down t-DCE coating operations so that the length of the ambient monitoring period represents 24 months of measured ambient concentrations during actual coating operation with t-DCE containing materials. 3) There are no violations of the 1,2-(trans-) Dichloroethylene emission limit during the 24 months of actual coating operation; 4) The facility's 1,2-(trans-) Dichloroethylene emissions are at least 80 percent of the permitted limit during the ambient air monitoring period; 5) The probability of future long-term average 1,2-(trans-) Dichloroethylene concentrations being above health guidelines is less than 5 percent. The Permittee shall test this requirement by calculating a 95 percent upper confidence limit for the mean concentration at each monitoring site and compare the highest 95 percent upper confidence limit to 80 percent of the health benchmark for 1,2-(trans-) Dichloroethylene, as adapted from EPA Ambient Air Monitoring Network Assessment Guidance (Section 4.1). If the calculated 95 percent upper confidence limit is below 80 percent of the inhalation health benchmark for 1,2-(trans-) Dichloroethylene, ambient air monitoring may be discontinued if all other criteria are met; and 6) The permit contains limits that restrict t-DCE/VOC emissions, based on modeled concentrations below inhalation health benchmarks as approved by MPCA.	No
28	5.1.58	Within 30 days after Permit Issuance, the Permittee shall use fencing, control access points, restriction signage, and remote monitoring as specified in Appendix H to maintain control over the fence line.	30 days is not enough time. Suggest 270 days as weather issues may delay construction, or the time needed to complete based on contractor schedules, material supplies, or other delays outside of Water Gremlin's control.	5.1.58: within 180 days	No
29	5.1.60	Within three calendar days of each observed breach…	Within three **working** days of each observed breach…	5.1.60: within three facility operating days	Yes
29	5.1.61	The Permittee shall inspect the fence line once per quarter…	…shall inspect the fence line **annually**	5.1.61: once per quarter	NO
29	5.2.1	COMG 1 VOC limit	Should be on the TFAC (total facility) level, not COMG1	5.2.1: same	NO
30	5.2.2	The Permittee shall limit emissions of 1,2-(trans-) Dichloroethylene <=32.6 tons per year.	The RASS shows the appropriate value on the TFAC level should be 49 tons per year even assuming a health benchmark of 20 ug/m3.	5.2.2: The Permittee shall limit emissions of 1,2-(trans-) Dichloroethylene <= 32.6 tons per year 365-day rolling sum to be calculated each operating day…	NO
30	5.2.2	The 1,2-(trans-) Dichloroethylene emissions released outside the coating rooms must also be included as described elsewhere in this permit.	If the limit in 5.2.2 is meant to include non-coating activities, it should be on the TFAC level, not the COMG 1 level. The RASS shows the appropriate facility-wide TDCE limit, assuming a health benchmark of 20 ug/m3, is 50.8 tpy.	5.2.2: The 1,2-(trans-) Dichloroethylene emissions released outside the coating rooms must also be included as described elsewhere in this permit	No
31	5.2.4	On each day of operation, the Permittee shall calculate, record, and maintain a record of the total weight of each VOC-containing material used in coating operations and any other VOC-containing material used at the facility.	Strike "and any other VOC containing material used at the facility" as the recordkeeping associated with cleaning products, hand sanitizer, etc. is overly burdensome.	5.2.4: Daily Recordkeeping. On each day of operation, the Permittee shall calculate, record, and maintain a record of the total weight of each VOC-containing material used in coating operations.	Yes

31	5.2.6(7) and (8)	7) Total weight of fugitive 1,2-(trans-) Dichloroethylene emissions based on measured indoor air concentrations in non-coating rooms using the concentrations and procedures in Appendix B, in tons; 8) Total weight of breakthrough emissions of 1,2-(trans-) Dichloroethylene from STRU 41 (remediation stack) as required elsewhere in this permit, in tons;	Strike this language. Fugitive emissions have been evaluated and modeled with a safety factor that eliminates the need for daily recordkeeping or ongoing sampling. 5.2.10 (the default uncaptured emission rate) also eliminates the need for this calculation and recordkeeping.	Fugitives included (7), breakthrough emissions not included	No
32	5.2.7	VOC Monthly Calculations methodology	Included in daily reporting requirements and is redundant. This requriement also conflicts with the Adminsitrative Order issued to Water Gremlin.	5.2.7: Volatile Organic Compounds: Monthly Calculations	No
33	5.2.9	Daily Reporting: The Permittee shall continue to comply with the requirements of all effective enforcement documents until those documents are terminated by MPCA. As of issuance of Permit No. 12300341-101, these enforcement documents include the Stipulation Agreement executed March 1, 2019 and the Administrative Order signed January 17, 2019. These documents are included for reference as Attachments 5 and 6 to the TSD of this permit, respectively. [Minn. R. 7007.0800, subp. 2(A) & (B)]	Daily Reporting: The 2019 Stipulation agreement and 2020 Administrative Oder should be terminated upon permit issuance.	5.2.9: Daily Reporting: The Permittee shall continue to comply with the requirements of all effective enforcement documents until those documents are terminated by MPCA. As of issuance of Permit No. 12300341-101, these enforcement documents include the Stipulation Agreement executed March 1, 2019, and the Administrative Order signed January 17, 2020. These documents are included for reference as Attachments 5 and 6 to the TSD of this permit, respectively.	No
33	5.2.12	1,2-(trans-) Dichloroethylene: Reconciliation of Predicted Stack Concentration and CEMS Readings. By 4:30pm each coating operating day, the Permittee shall calculate and record the predicted stack concentration of 1,2-(trans-) Dichloroethylene versus 1,2-(trans-) Dichloroethylene usage the following equation:	The stack CEMS does not measure T-DCE concentration. It measures total hydrocarbons and reports the results as THC as T-DCE. Two should not be conflated.	5.2.12: 1,2-(trans-) Dichloroethylene: Reconciliation of Predicted Stack Concentration and CEMS (EQUI 176) Readings. By 4:30pm each coating operating day, the Permittee shall calculate and record the predicted stack concentration of 1,2-(trans-) Dichloroethylene versus 1,2-(trans-) Dichloroethylene usage the following equation: y = 0.1295x + 49.163	No
33	5.2.13	Reconciliation of Predicted Stack Concentration and CEMS Readings Audit: If the daily CEMS reading exceeds the predicted 1,2-(trans-) Dichloroethylene stack concentration for that day, in ppmv-wet, the Permittee shall immediately audit the 1,2-(trans-) Dichloroethylene-containing material usage and inventory records to determine the cause of this discrepancy and shall report this as a deviation. The Permittee shall keep records of each calculation and whether a deviation was observed. [Minn. R. 7007.0800, subps. 4-6]	This is unworkable. Our review shows that the CEMS data measuring THC cannot be predicted by T-DCE usage. This is why the CEMS is unnecessary and it doesn't produce usable data. The daily tracking spreadsheet, the monthly inventory audit and the usage limits are sufficient verification that WG is not endangering human health and the environment.	5.2.13: Reconciliation of Predicted Stack Concentration and CEMS Readings Audit: If the daily CEMS (EQUI 176) reading exceeds the predicted 1,2-(trans-) Dichloroethylene stack concentration for that day, in ppmv-wet, the Permittee shall immediately audit the 1,2- (trans-) Dichloroethylene-containing material usage and inventory records to determine the cause of this discrepancy and shall report this as a deviation. The Permittee shall implement needed corrections based on this review. The Permittee shall keep records of each calculation, whether a deviation was observed, and whether a correction was made and how the correction was made.	No
40	5.3.8	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit.	As elsewhere in the permit, Water Gremlin suggests "using US EPA reference method 5 or 201A and method 202" anywhere that Method 201A is specified due to duct sizes at the facility. This comment applies to all instances of "method 201A" for PM10 and PM2.5 testing in the permit.	5.3.11: "shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used."	Yes, if applied globally.
45	5.5.9	Daily Inspection: On each day of operation, the Permittee shall inspect the floor of each coating room to check for degradation of the Retro-Coat Vapor Intrusion Coating System and do the following (where applicable): 1) If degradation is discovered, the Permittee shall immediately resolve the degradation. 2) If the degradation is not resolved within 24 hours, the Permittee shall immediately cease VOC- coating operations in that coating room until the degradation is corrected. 3) Notify the MPCA immediately upon ceasing VOC coating operations due to degradation on the Retro-Coat Vapor Intrusion System. 4) Photographs of all degradation areas shall be taken before and after corrective actions are taken. Photographs shall be retained in Facility records. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. Stat. 116.385, subd. 3]	Permit requirements for coating floor inspections should be consistent with negotiated practices	5.5.9: Daily Inspection: On each day of operation, the Permittee shall inspect the floor of each coating room where t-DCE VOC coaters operate to check for degradation of the Retro-Coat Vapor Intrusion Coating System and do the following (where applicable): 1) If degradation is discovered, the Permittee shall immediately resolve the degradation. 2) If the degradation is not resolved within 24 hours, the Permittee shall immediately cease VOC coating operations in that coating room until the degradation is corrected. 3) Notify the MPCA immediately upon ceasing VOC coating operations due to degradation on the Retro-Coat Vapor Intrusion System. 4) Photographs of all degradation areas shall be taken before and after corrective actions are taken. Photographs shall be retained in Facility records.	No
46	COMG 9 (5.9.1-5.9.17)		Strike this section - the compliant modeling demonstrated that operational and emission limits from the SSDS are not necessary for protecting human health or the environment. The stack (STRU41) has been quantitatively assessed without carbon control.	COMG 9 still includes required carbon for the mitigation system	No
50	5.10.1	The Permittee shall limit total maximum Heat Input <= 10.68 million British thermal units	The Permittee shall limit total maximum Heat Input <= 10.69 million British thermal units	5.10.5: limit total max heat input to 10.69 MMBTU/hr	Yes
50	5.10.2	The Permittee shall limit total maximum Heat Input <= 2.18 million British thermal units	The Permittee shall limit total maximum Heat Input <= 2.29 million British thermal units	5.15.1: limit total max heat input <=2.29 MMBTU/hr	Yes
70	5.39.3-5.39.7	Daily calculation method	Strike these sections. The throughput limit and recordkeeping data are sufficient to show compliance with the relevant PM and lead standards and the compliant modeling scenario. Daily emissions calculations are unnecessary and redundant. This comment applies to all die casting units.	5.41.5-5.41.7 - Daily calculation equations remain.	No
165	5.77.1-5.77.10	CEMS requirements	Strike this language. A CEMS for STRU73 is neither necessary (given the recordkeeping and inventory requirements) nor useful (since results present total hydrocarbons as TDCE but do not directly measure TDCE).	5.80.1-5.80.10 remain	No
221	5.113.4-5.113.6	Data collection, daily monitoring, and monitoring equipment	These requirements are unnecessary and not consistent with the smog hog's operations. This comment applies to all smog hogs.	5.134.4-5.134.6: data collection, daily monitoring, monitoring equipment	No
248	5.137.6	Daily Inspections: Once each operating day, the Permittee shall visually inspect the condition of each Stage 1, Stage 2, and HEPA filter with respect to alignment, saturation, tears, holes and any other condition that may affect the filter's performance. The Permittee shall maintain a daily written record of filter inspections. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]	This is unnecessary. The gauge inspections should be sufficient. The Nederman are not built for frequent physical inspections. Opening the doors will impact capture efficiency. This comment applies to all Nedermans paired with smog hogs. See attached letter from supplier.	5.156.6: Daily inspections: verify if the pressure drop reading is such that filter maintenance is required as per the manufacturer's specifications.	Yes

270	6.5.1	Performance test for total enclosure	Redundant to conduct frequent testing as the negative pressure alarms from 6.5.2 are sufficient.	6.3.2: The Permittee shall conduct a performance test due within 30 days of permit issuance and every 12 months thereafter to determine if each coating room in COMG 5 is a permanent total enclosure that meets the criteria of Method 204 of appendix M to 40 CFR Pt. 51.	No
271	6.5.2	The Permittee shall conduct a performance test due within 30 days of permit issuance and every 12 months thereafter to determine if each coating room in COMG 5 is a permanent total enclosure that meets the criteria of Method 204 of appendix M to 40 CFR pt. 51.	every 5 years thereafter	See above	No
273	6.9.1	Particulate Matter: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 11.	Not necessary to test each and every smog hog stack	SH 15, SH 1, SH2, SH3, STRU73 due 180 days after issuance. SH5, SH 6, SH8, STRU 57 due 12 months after issuance. SH 9, SH 10, SH 11 due 24 months after issuance. SH12, SH16, SH17, SH18 due 36 months after issuance. SH19, SH20, due 48 months after issuance.	No
272	6.7	Emergency Generator Engine requirements	The emergency generator is already installed and operating. The listed requirements are not appropriate.	6.4.1-6.4.4: notification requirements for emergency generator and notification of anticipated date for opacity observations.	No
272	6.8	VOC CEMS	Water Gremlin has requested that the VOC CEMS requirements be discontinued.	6.5.1-6.5.4 remain in the permit.	No

Exhibit 3

MINNESOTA POLLUTION CONTROL AGENCY

Preliminary Draft Permit
Air Individual Permit
Major Amendment
12300341-101

Permittee: **Okabe Holding USA, Inc**

Co-permittee name: **Water Gremlin Company**

Facility name: **Water Gremlin Company**
4400 Otter Lake Road
White Bear Township, MN 55110-3757
Ramsey County

Operating permit issuance date: July 20, 2000

Expiration date: [Five years from issue date]
* All Title I Conditions do not expire

Major Amendment: [TBD]

Permit characteristics: State; Limits to avoid Part 70/ Limits to avoid NSR; Limits to avoid NSR

The emission units, control equipment and emission stacks at the stationary source authorized in this permit amendment are as described in the submittals listed in the Permit Applications Table.

This permit amendment supersedes and replaces Air Emission Permit No. 12300341-004 and authorizes the Permittee to modify and operate the stationary source at the address listed above unless otherwise noted in the permit. Except as amended herein, ~~T~~the Permittee must comply with all the conditions of the permit, Air Emission Permit No. 12300341-101. At the time of permit issuance, the following agreements and orders are enforceable until the Minnesota Pollution Control Agency terminates these:

- March 1, 2019, Stipulation Agreement; and
- January 17, 2020, Administrative Order.

Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Unless otherwise indicated, all the Minnesota rules cited as the origin of the permit terms are incorporated into the SIP under 40 CFR § 52.1220 and as such are enforceable by U.S. Environmental Protection Agency (EPA) Administrator or citizens under the Clean Air Act.

Signature: /

This document has been electronically signed.

for Steven S. Pak, P.E., Manager
Air Quality Permits Section
Industrial Division

for the Minnesota Pollution Control Agency

Commented [A1]: All of the regulated party requirements set forth in the Stipulations agreement and AO have been completed, per the negotiated agreement with the State (AG's office) and Water Gremlin. As discussed with MPCA, the permit includes the terms and conditions agreed to by the parties and there is no basis for reference to the AO and Stipulation Agreement, which must be terminated.

Table of Contents

Page

1. Permit applications table

Permit applications:

Title description	Application receipt date	Action number
Administrative Amendment	06/30/2016	12300341-101
Major Amendment	10/23/2018	
Major Amendment	02/08/2019 (supplemental information received 8/30/2019, 2/21/2020, 4/21/2020, 11/19/2021, 12/6/2021, 1/10/2022 and final application dated 07/01/2022)	

2. Where to send submittals

Send submittals that are required to be submitted to the EPA regional office to:

Chief Air Enforcement
Air and Radiation Branch
EPA Region V
77 West Jackson Boulevard
Chicago, Illinois 60604

Each submittal must be postmarked or received by the date specified in the applicable Table. Those submittals required by Minn. R. 7007.0100 to 7007.1850 must be certified by a responsible official, defined in Minn. R. 7007.0100, subp. 21. Other submittals shall be certified as appropriate if certification is required by an applicable rule or permit condition.

Send submittals that are required by the Acid Rain Program to:

U.S. Environmental Protection Agency
Clean Air Markets Division
1200 Pennsylvania Avenue NW (6204N)
Washington, D.C. 20460

Send any application for a permit or permit amendment to:

Fiscal Services – 6th Floor
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Also, where required by an applicable rule or permit condition, send to the Permit Document Coordinator notices of:

a. Accumulated insignificant activities
b. Installation of control equipment
c. Replacement of an emissions unit, and
d. Changes that contravene a permit term

Unless another person is identified in the applicable Table, send all other submittals to:

AQ Compliance Tracking Coordinator
Industrial Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Or

Email a signed and scanned PDF copy to:
submitstacktest.pca@state.mn.us
(for submittals related to stack testing)
AQRoutineReport.PCA@state.mn.us
(for other compliance submittals)
(See complete email instructions in "Routine Air Report Instructions Letter" at http://www.pca.state.mn.us/nwqh472.)

3. Facility description

The Water Gremlin Co (Facility) is located at 4400 Otter Lake Road, White Bear Township, Ramsey County, Minnesota.

The facility manufactures lead metal products fabricated using refined material purchased from recycling facilities. The facility produces battery terminal posts which are a major and critical component for use in automotive, marine and other consumer, commercial, governmental, and military vehicles and equipment. Other fabricated products include lead and tin sinker weights for recreational fishing applications, and lead components for governmental, commercial, recreational and personal munitions. Following fabrication, some battery terminal posts are treated with a coating to protect the products from corrosion or to improve fit with other components. The air emission units at the facility include battery terminal post coating units (coaters), die casting units, lead and tin melt pots, coining units, abrasive blasting units, makeup air units, space heaters, and an emergency generator. The ~~major pollutants of concern~~facility's air emissions include ~~volatile organic compounds (VOC),~~ trans-1,2-dichloroethylene (t-DCE), lead, particulate matter (PM), particulate matter with aerodynamic diameter less than 10 micrometers (PM_{10}), particulate matter with aerodynamic diameter less than 2.5 micrometers ($PM_{2.5}$), and nitrogen oxides (NO_x). ~~Other pollutants emitted from~~ The facility's ~~processes~~ emissions also include lesser amounts of sulfur dioxide (SO_2), volatile organic compounds (VOCs), carbon monoxide (CO), and hazardous air pollutants (HAPs) associated with fossil fuel combustion from the compression ignition emergency generator, makeup air units, lead and tin melt pots, and space heaters.

Pollution control equipment operated at the facility includes eighteen Nederman mist eliminators, ~~/~~HEPA filters and low-efficiency electrostatic precipitators (ESP), connected in-series, which capture lead and PM/PM_{10}/$PM_{2.5}$ emissions from lead and tin processing units. HEPA filters are used on select coaters to control PM/PM_{10}/$PM_{2.5}$ emissions from spray coating, and abrasive blasting units. The facility also operates a sub-slab depressurization system (SSDS) and soil vapor extraction (SVE) system with two granular activated carbon (GAC) canisters to collect and control VOC and HAP emissions from beneath the facility's concrete floor.

Description of permit additions

The permit acknowledges that at the time of permit issuance, there are other enforceable documents regulating air emissions from the facility and that these enforceable documents are not terminated with the issuance of Permit No. 12300341-101. The other enforceable documents are the Stipulation Agreement (Agreement) executed March 1, 2019, and Administrative Order (Order), signed January 17, 2020.

Commented [A2]: Terminate the Agreement and Order and delete this paragraph. The air permit contains the pertinent requirements.

Addition of emission units previously identified as insignificant activities. Several emission units at the facility were previously identified as insignificant activities under Minn. R. 7007.1300, subp. 3(F) (formerly Minn. R. 7007.1300, subp 3(I)), including die casting units, natural gas-fired heating equipment, distillation equipment, and cooling towers. As a result of current Title V modeling, the facility accepted emission limits to demonstrate compliance with applicable National Ambient Air Quality Standards (NAAQS). Since these units were modeled explicitly, they have been added to the subject item inventory as emission units.

Addition of limits on t-DCE, PM_{10}, $PM_{2.5}$, NO_2, and lead emissions. The technical review of the permit applications required an air emissions risk analysis (AERA) and dispersion model to determine the health risks of t-DCE and lead emissions from the facility. Through the permitting process, the facility was required to conduct Title V modeling to determine modeled compliance with applicable PM_{10}, $PM_{2.5}$, NO_2, and lead NAAQS. The results of these analyses required emissions and operation limits such that the facility remains in compliance with all applicable PM_{10}, $PM_{2.5}$, NO_2, and lead NAAQS and below the heath benchmarks for t-DCE and lead.

Addition of continuous emissions monitoring system (CEMS) in the battery terminal post coater stack. The permit includes a VOC CEMS in the battery terminal post coater stack (STRU 73). This was required temporarily by the

Agreement to monitor the occurrence of emissions from the coaters and ~~quantify~~ estimate the amount of t-DCE (as VOC) leaving the coaters to verify compliance with solvent use limits required by the Agreement. Permanent operation and maintenance of a VOC CEMS, record keeping of CEM results and CEM correlation validation is required by the permit as a supplement to the main compliance determination method of record keeping of daily material usage. Other supplemental requirements include quarterly VOC solvent inventory audits, and reporting.

Commented [A3]: Delete the CEMS requirement. CEMS for STRU73 is not necessary nor useful. See comment letter for further information.

Addition of solvent vapor remediation system. The permit includes the addition of the sub-slab depressurization and solvent vapor extraction system with associated GAC canister control equipment to capture existing (and future) sub-slab solvent vapor contamination identified during the remedial investigation. The permit includes limits on emissions of target chlorinated compounds, operation, monitoring, recordkeeping, and reporting requirements.

Commented [A4]: Testing and modeling shows the GAC is unnecessary and does not belong in the air permit. The Remediation group oversees the mitigation system operation.

Addition of ambient monitors for VOCs with speciation for t-DCE and other VOCs. Operation of approved ambient air VOC monitors required by the Agreement are to be operated for at least two years following permit issuance to ensure t-DCE emissions remain below health risk benchmarks at all times. Conditions that must be met to discontinue VOC monitoring are also specified. The facility is responsible for managing each monitor's operation, maintenance, recordkeeping, and reporting of results as described later in this permit.

Commented [A5]: There is no scientific justification for ongoing ambient air monitoring. Water Gremlin has collected (and provided on a simultaneous basis) three years of ambient air data at a cost of more than $1.5MM per year (as required under the Unilateral Administrative Order). Water Gremlin has also provided the MPCA with a compliant model. There is no factual, scientific basis or legal requirement for ambient air monitoring based on the toxicity evaluation, the model and the collection of over two years of data.

Recurring testing to verify coating rooms are total enclosures. The discovery of solvent vapor intrusion into sub-slab vapor space indicates the need to enhance the permit requirements to ensure that the coating rooms are being maintained as total enclosures and there are no leaks through the floors. Therefore, in order to ensure all VOC solvent vapors from coating operations are being vented to the common stack (STRU 73), the permit requires a minimum negative pressure differential be maintained and continuous monitoring of coating room pressure and alarms (audible and visual) that alert when coating room pressure is above the set point established under the permit. The permit also requires daily inspection of enclosure integrity, ~~annual~~ testing of the enclosure every five years to ensure it meets the definition described above following EPA Method 204 in Appendix M of 40 CFR Part 51, and maintenance of coating room floor sealant to avoid further sub-slab contamination due to vapor intrusion or spills.

Commented [A6]: The facility is not subject to 40 CFR 63 subp. MMMM and should not be required to meet the standards of that NESHAP. Annual testing of the total enclosure should be replaced with testing every 5 years.

Solvent authorized for use in coating operations. Permit No. 12300341-003 authorized the use of trichloroethylene (TCE), a VOC and HAP, as an allowable solvent in coating operations. Water Gremlin has eliminated the use of TCE ~~in~~ at the facility and is using t-DCE as the TCE replacement. This permit prohibits the use of TCE in any facility operations, and changes the allowable VOC-based coating solvent formula to less than or equal to 90 percent by weight VOC. All of the VOC is conservatively assumed to be t-DCE, and the balance of the material is comprised of greater than or equal to 10 percent by weight of non-HAP, non-VOC (inert) constituents. Changes to any solvent formulation that increases the amount of regulated ~~pollutants or air toxics for which there are health benchmarks~~VOCs emitted from the coating operations, or adds new ~~regulated pollutants~~VOCs in the coating operations, may require a major amendment described under Minn. R. 7007.1500.

Incorporation of minor amendment authorizing operation of EQUI 82 and authorization to install EQUI 219, EQUI 220, and additional UV coaters. Air Quality Permit No. 12300341-004 authorized construction and operation of a battery terminal post coater (EQUI 82) utilizing a non-t-DCE, very low VOC, UV-cured coating technology. Since the refined dispersion model was in-progress at the time, this~~e~~ permit amendment limited PM/PM_{10}/$PM_{2.5}$ emissions to less than or equal to each pollutant's significant impact level (SIL) established by MPCA dispersion modeling guidance in order to ensure protection of air quality. The minor amendment has been incorporated into this permit and is subject to the PM10 and PM2.5 limits at STRU 73 established by the refined dispersion model. In spite of the effective increase in allowable emissions from EQUI 82 compared to what was authorized by the minor amendment, the refined model demonstrates compliance with applicable PM_{10} and $PM_{2.5}$ NAAQS. The refined model includes revised emission limits for EQUI 82 as well as allowable emissions for future UV coaters.

Authorization to convert VOC coaters to UV or water-based coating, and conversion to other application methods. Existing VOC coaters were converted to use a water-based coating or UV coating application to further reduce VOC emissions. These were added to the permit and their emissions regulated for VOC, PM_{10}, and $PM_{2.5}$. UV and water-

based coaters that use spray application methods must be operated in coating rooms functioning as total enclosures. The permit allows for the conversion of VOC coaters to use water-based coating or UV coater application, and conversion of water-based coaters to UV coaters, or vice versa. The permit allows conversion of dip/drip water-based coaters to water-based spray application methods, and vice versa. The permit prohibits the conversion of water-based or UV coaters to VOC coaters, the addition of more VOC coaters, or the increase in capacity of existing VOC coaters without a major amendment.

Description of permit modifications
Modification of VOC emissions calculation procedure and addition of t-DCE emissions calculation procedure. The current permit authorizes calculation of VOC emissions using solvent purchase and inventory records. Due to concerns around the recordkeeping and compliance verification frequency of the current method, and to increase the accuracy of emissions accounting, the permit requires daily recordkeeping of several parameters related to solvent use, including VOC coating, water-based coating, and UV coating usage, VOC solvent recovered from the distiller, VOC waste, and calculating the VOC 12-month rolling sum and t-DCE 365-day rolling sum, in addition to VOC solvent purchase and inventory records. Uncaptured VOC/ t-DCE emissions outside the coating rooms will be included in daily calculations based on measured indoor air concentrations as described later in this permit.

Description of permit deletions
Dismantlement and removal of Fluidized Bed Solvent Recovery (carbon adsorption) unit. The facility had a carbon adsorption unit, originally installed in 2002, to control and recover TCE emissions from coating operations, which were then reconditioned and reused in the coating process. A larger carbon adsorption unit was installed in December 2018 to solve efficiency issues identified in the Environmental Audit. ~~As a result of enforcement of the Agreement, TCE use was banned from the facility and~~ Since no TCE is used at the facility, an attempt was made to retrofit the new carbon adsorption unit to recover t-DCE. The initial performance test revealed a control efficiency far less than warranted by the manufacturer due to the unit being originally designed for TCE recovery. After numerous attempts to obtain a consistent control efficiency greater than or equal to 70 percent as proposed in the application, the facility abandoned the adsorption unit as a feasible control device in its operations; therefore, the carbon adsorption unit has been removed from the permit. The facility will demonstrate compliance with VOC and t-DCE emission limits on coating operation through limiting solvent usage in coating operations.

Removal of VOC and HAP emission limit precap. Permit No. 12300341-003 allows for installation and operation of additional VOC battery terminal post coaters without prior authorization from the MPCA. This permit condition has been removed and the addition of new VOC battery post coaters or the replacement of existing VOC coaters with larger capacity VOC coaters will not be authorized by this permit. The permit pre-authorizes addition of water-based (very low VOC content) and UV-cured coating units.

Commented [A7]: Water Gremlin is unfamiliar with the concerns cited and the party who raised them.

Commented [A8]: The uncaptured VOC/t-DCE emissions outside the coating room are insignificant, especially in light of the applicable EPA PPRTV threshold. Remove this requirement throughout the permit.

Commented [A9]: As acknowledged here, usage limits and tracking are sufficient to demonstrate compliance. Modeling at the usage limits verifies ambient air concentrations are below health benchmarks. Monitoring is not necessary.

4. Summary of subject items

SI ID: Description	Relationship type	Related SI ID: Description
TFAC 1: Water Gremlin Co		
ACTV 3: All IAs		
COMG 1: VOC and 1,2 (trans) Dichloroethylene Limits and VOC Coater, Water-Based Coater, UV Coater, and Solvent Distillation Operation Requirements.	has members	EQUI 82, EQUI 84, EQUI 85, EQUI 87, EQUI 88, EQUI 89, EQUI 92, EQUI 93, EQUI 94, EQUI 95, EQUI 97, EQUI 98, EQUI 99, EQUI 100, EQUI 116, EQUI 117, EQUI 166, EQUI 172, EQUI 173, EQUI 174, EQUI 176, EQUI 233, EQUI 240
COMG 2: PM10 and PM2.5: Limits and Compliance Requirements for Ultraviolet (UV) Battery Terminal Post Coaters	has members	EQUI 82, EQUI 84, EQUI 117, EQUI 219, EQUI 220, EQUI 240
COMG 4: PM10 and PM2.5: Limits and Compliance Requirements for VOC Spray Battery Terminal Post Coaters	has members	EQUI 88, EQUI 95
COMG 5: Permanent Total Enclosure Requirements: Coating Rooms	has members	EQUI 82, EQUI 84, ~~EQUI 85~~, EQUI 87, EQUI 88, ~~EQUI 89~~, ~~EQUI 92,~~ EQUI 93, EQUI 94, EQUI 95, ~~EQUI 97,~~ EQUI 98, EQUI 99, EQUI 100, EQUI 166, EQUI 168, EQUI 169, EQUI 170, EQUI 171, EQUI 173, EQUI 219, EQUI 220
COMG 6: Indirect Heating Equipment Rule Requirements	has members	EQUI 101, EQUI 102, EQUI 103, EQUI 104
COMG 7: Industrial Process Equipment Rule Requirements	has members	EQUI 82, EQUI 84, EQUI 88, EQUI 95, EQUI 113, EQUI 114, EQUI 115, EQUI 117, EQUI 121, EQUI 122, EQUI 123, EQUI 124, EQUI 125, EQUI 126, EQUI 127, EQUI 128, EQUI 129, EQUI 130, EQUI 131, EQUI 132, EQUI 133, EQUI 134, EQUI 135, EQUI 136, EQUI 137, EQUI 138, EQUI 139, EQUI 140, EQUI 141, EQUI 142, EQUI 143, EQUI 146, EQUI 147, EQUI 149, EQUI 150, EQUI 152, EQUI 153, EQUI 154, EQUI 155, EQUI 156, EQUI 157, EQUI 158, EQUI 160,

Commented [A10]: Update COMG 5: Remove EQUI 85, 89, 92, and 97 as they are Tacolyn-only dip/drip coaters with no PM emissions and no need to be in a total enclosure.

Formatted: Space Before: 0.05 pt

SI ID: Description	Relationship type	Related SI ID: Description
		EQUI 205, EQUI 206, EQUI 221, EQUI 222, EQUI 223, EQUI 224, EQUI 225, EQUI 226, EQUI 227, EQUI 228, EQUI 229, EQUI 230, EQUI 231, EQUI 232, EQUI 240
COMG 8: PM10 and PM2.5: Limits and Compliance Requirements for Water-Based Spray Battery Terminal Post Coaters	has members	EQUI 88, EQUI 95
COMG 9: Sub-Slab Vapor Mitigation System: Operation Requirements	has members	EQUI 167, TREA 50, TREA 51
COMG 10: NOx: North Building Space Heating Capacity and Operation Limits	has members	EQUI 177, EQUI 178, EQUI 179, EQUI 180, EQUI 181, EQUI 182, EQUI 183, EQUI 184, EQUI 185, EQUI 186, EQUI 187, EQUI 188, EQUI 189, EQUI 190, EQUI 191, EQUI 192, EQUI 193, EQUI 194, EQUI 195, EQUI 196, EQUI 197, EQUI 198, EQUI 199, EQUI 200, EQUI 201,

SI ID: Description	Relationship type	Related SI ID: Description
		EQUI 202, EQUI 203, EQUI 204, EQUI 205, EQUI 206, EQUI 207
COMG 11: Nederman Filter and Smog Hog Control Equipment Train - Melt Pots	has members	TREA 1, TREA 60
COMG 12: Nederman Filter and Smog Hog Control Equipment Train - Die Casting	has members	TREA 25, TREA 26, TREA 27, TREA 30, TREA 33, TREA 34, TREA 35, TREA 36, TREA 39, TREA 40, TREA 41, TREA 42, TREA 43, TREA 61, TREA 62, TREA 63, TREA 64, TREA 65, TREA 66, TREA 67, TREA 68, TREA 69, TREA 70, TREA 71, TREA 72, TREA 73, TREA 74, TREA 75, TREA 76, TREA 77, TREA 78, TREA 79
COMG 13: Direct Heating Equipment Rule Requirements	has members	EQUI 106, EQUI 107, EQUI 108, EQUI 109, EQUI 110, EQUI 111, EQUI 112, EQUI 177, EQUI 178, EQUI 179, EQUI 180, EQUI 181, EQUI 182, EQUI 183, EQUI 184, EQUI 185, EQUI 186, EQUI 187, EQUI 188,

SI ID: Description	Relationship type	Related SI ID: Description
		EQUI 189, EQUI 190, EQUI 191, EQUI 192, EQUI 193, EQUI 194, EQUI 195, EQUI 196, EQUI 197, EQUI 198, EQUI 199, EQUI 200, EQUI 201, EQUI 202, EQUI 203, EQUI 204, EQUI 205, EQUI 206, EQUI 207, EQUI 208, EQUI 209, EQUI 210, EQUI 211, EQUI 212, EQUI 213, EQUI 214, EQUI 215, EQUI 216, EQUI 217, EQUI 218, EQUI 222
COMG 14: HEPA Filters - Spray Coaters	has members	TREA 55, TREA 56, TREA 57, TREA 58, TREA 59
COMG 15: NOx: South Building Space Heating Capacity and Operation Limits	has members	EQUI 208, EQUI 209, EQUI 210, EQUI 211, EQUI 212, EQUI 213, EQUI 214, EQUI 215, EQUI 216, EQUI 217, EQUI 218
COMG 16: Die Casting Annual Throughput and Lead Emission Limits	has members	EQUI 121, EQUI 122, EQUI 123, EQUI 124, EQUI 125, EQUI 126, EQUI 127, EQUI 128, EQUI 129, EQUI 130, EQUI 131, EQUI 132, EQUI 133, EQUI 134, EQUI 135, EQUI 136, EQUI 137, EQUI 138, EQUI 139, EQUI 140, EQUI 141, EQUI 142, EQUI 143, EQUI 146, EQUI 147, EQUI 149, EQUI 150, EQUI 152, EQUI 153, EQUI 154, EQUI 155, EQUI 156, EQUI 157, EQUI 158
EQUI 82: Battery Terminal Post Coater 6	sends to	STRU 73: Battery Terminal Post Coater Stack
EQUI 84: Battery Terminal Post Coater 9	sends to	STRU 73: Battery Terminal Post Coater Stack
EQUI 84: Battery Terminal Post Coater 9	is controlled by	TREA 55: HEPA Filter - EQUI 84
EQUI 85: Battery Terminal Post Coater 10	sends to	STRU 73: Battery Terminal Post Coater Stack
EQUI 87: Battery Terminal Post Coater 12	sends to	STRU 73: Battery Terminal Post Coater Stack
EQUI 88: Battery Terminal Post Coater 15	sends to	STRU 73: Battery

SI ID: Description	Relationship type	Related SI ID: Description
		Terminal Post Coater Stack
EQUI 88: Battery Terminal Post Coater 15	is controlled by	TREA 56: HEPA Filter - EQUI 88
EQUI 89: Battery Terminal Post Coater 17	sends to	STRU 73: Battery Terminal Post Coater Stack
EQUI 92: Battery Terminal Post Coater 20	sends to	STRU 73: Battery Terminal Post Coater Stack
EQUI 93: Battery Terminal Post Coater 21	sends to	STRU 73: Battery Terminal Post Coater Stack
EQUI 94: Battery Terminal Post Coater 22	sends to	STRU 73: Battery Terminal Post Coater Stack
EQUI 95: Battery Terminal Post Coater 23	sends to	STRU 73: Battery Terminal Post Coater Stack
EQUI 95: Battery Terminal Post Coater 23	is controlled by	TREA 57: HEPA Filter - EQUI 95
EQUI 97: Battery Terminal Post Coater 25	sends to	STRU 73: Battery Terminal Post Coater Stack
EQUI 98: Battery Terminal Post Coater 26	sends to	STRU 73: Battery Terminal Post Coater Stack
EQUI 99: Battery Terminal Post Coater 27	sends to	STRU 73: Battery Terminal Post Coater Stack
EQUI 100: Battery Terminal Post Coater 28	sends to	STRU 73: Battery Terminal Post Coater Stack
EQUI 101: CF Scrap Re-Melt Pot	sends to	STRU 1: Smog Hog #15 Stack
EQUI 101: CF Scrap Re-Melt Pot	is controlled by	TREA 1: Smog Hog #15
EQUI 101: CF Scrap Re-Melt Pot	is controlled by	TREA 60: Nederman Filter 15N - STRU 1
		Filter 15N - STRU 1
EQUI 102: Small Re-Melt Pot	sends to	STRU 1: Smog Hog #15 Stack
EQUI 102: Small Re-Melt Pot	is controlled by	TREA 1: Smog Hog #15
EQUI 102: Small Re-Melt Pot	is controlled by	TREA 60: Nederman Filter 15N - STRU 1
EQUI 103: Doe Run Melt Pot	sends to	STRU 1: Smog Hog #15 Stack
EQUI 103: Doe Run Melt Pot	is controlled by	TREA 1: Smog Hog #15
EQUI 103: Doe Run Melt Pot	is controlled by	TREA 60: Nederman Filter 15N - STRU 1
EQUI 104: CF Re-Melt Pot	sends to	STRU 1: Smog Hog #15 Stack
EQUI 104: CF Re-Melt Pot	is controlled by	TREA 1: Smog Hog #15
EQUI 104: CF Re-Melt Pot	is controlled by	TREA 60: Nederman Filter 15N - STRU 1
EQUI 106: Make-up Air Unit 1N	sends to	STRU 43: Exhaust fan #7
EQUI 106: Make-up Air Unit 1N	sends to	STRU 47: Exhaust fan #4
EQUI 106: Make-up Air Unit 1N	sends to	STRU 48: Exhaust fan #5
EQUI 106: Make-up Air Unit 1N	sends to	STRU 49: Exhaust fan #6
EQUI 107: Make-up Air Unit 2N	sends to	STRU 44: Exhaust fan #1
EQUI 107: Make-up Air Unit 2N	sends to	STRU 45: Exhaust fan #2
EQUI 107: Make-up Air Unit 2N	sends to	STRU 46: Exhaust fan #3
EQUI 108: Make-up Air Unit 3N	sends to	STRU 44: Exhaust fan #1
EQUI 108: Make-up Air Unit 3N	sends to	STRU 45: Exhaust fan #2
EQUI 108: Make-up Air Unit 3N	sends to	STRU 46: Exhaust fan #3
EQUI 108: Make-up Air Unit 3N	sends to	STRU 47: Exhaust fan #4
EQUI 109: Make-up Air Unit 5N	sends to	STRU 43: Exhaust fan #7

SI ID: Description	Relationship type	Related SI ID: Description
EQUI 109: Make-up Air Unit 5N	sends to	STRU 48: Exhaust fan #5
EQUI 109: Make-up Air Unit 5N	sends to	STRU 49: Exhaust fan #6
EQUI 109: Make-up Air Unit 5N	sends to	STRU 50: Exhaust fan #8
EQUI 110: Make-up Air Unit 6N	sends to	STRU 51: Exhaust fan #9
EQUI 110: Make-up Air Unit 6N	sends to	STRU 52: Exhaust fan #10
EQUI 110: Make-up Air Unit 6N	sends to	STRU 53: Exhaust fan #11
EQUI 110: Make-up Air Unit 6N	sends to	STRU 56: Exhaust fan #14
EQUI 111: Make-up Air Unit 9N	sends to	STRU 44: Exhaust fan #1
EQUI 111: Make-up Air Unit 9N	sends to	STRU 45: Exhaust fan #2
EQUI 111: Make-up Air Unit 9N	sends to	STRU 46: Exhaust fan #3
EQUI 112: Make-up Air Unit 11N	sends to	STRU 51: Exhaust fan #9
EQUI 112: Make-up Air Unit 11N	sends to	STRU 52: Exhaust fan #10
EQUI 112: Make-up Air Unit 11N	sends to	STRU 53: Exhaust fan #11
EQUI 112: Make-up Air Unit 11N	sends to	STRU 56: Exhaust fan #14
EQUI 113: Tool room 1 Abrasive Blasting	sends to	STRU 57: Shipping vent 20
EQUI 113: Tool room 1 Abrasive Blasting	is controlled by	TREA 52: HEPA Filter - Tool Room 1 Abrasive Blasting
EQUI 114: Tool room 2 Abrasive Blasting	sends to	STRU 57: Shipping vent 20
EQUI 114: Tool room 2 Abrasive Blasting	is controlled by	TREA 53: HEPA Filter - Tool Room 2 Abrasive Blasting
EQUI 115: DC Abrasive Blasting	sends to	STRU 43: Exhaust fan #7
EQUI 115: DC Abrasive Blasting	sends to	STRU 50: Exhaust fan #8
EQUI 115: DC Abrasive Blasting	is controlled by	TREA 54: HEPA Filter - DC Abrasive Blasting
EQUI 116: Battery Terminal Post Coater 30	sends to	STRU 50: Exhaust fan #8
EQUI 117: South Building R&D Coater	sends to	STRU 35: Smog Hog #21 Stack
EQUI 120: Emergency Generator Engine	sends to	STRU 4: Emergency Generator Engine Stack
EQUI 121: Die Cast (DC09)	sends to	STRU 15: Smog Hog #1 Stack
EQUI 121: Die Cast (DC09)	sends to	STRU 48: Exhaust fan #5
EQUI 121: Die Cast (DC09)	is controlled by	TREA 25: Smog Hog #1
EQUI 121: Die Cast (DC09)	is controlled by	TREA 61: Nederman Filter 1N - STRU 15
EQUI 122: Die Cast (DC12)	sends to	STRU 15: Smog Hog #1 Stack
EQUI 122: Die Cast (DC12)	sends to	STRU 48: Exhaust fan #5
EQUI 122: Die Cast (DC12)	is controlled by	TREA 25: Smog Hog #1
EQUI 122: Die Cast (DC12)	is controlled by	TREA 61: Nederman Filter 1N - STRU 15
EQUI 123: Die Cast (DC33)	sends to	STRU 15: Smog Hog #1 Stack
EQUI 123: Die Cast (DC33)	sends to	STRU 49: Exhaust fan #6
EQUI 123: Die Cast (DC33)	is controlled by	TREA 25: Smog Hog #1
EQUI 123: Die Cast (DC33)	is controlled by	TREA 61: Nederman

SI ID: Description	Relationship type	Related SI ID: Description
		Filter 1N - STRU 15
EQUI 124: Die Cast (DC14)	sends to	STRU 16: Smog Hog #2 Stack
EQUI 124: Die Cast (DC14)	sends to	STRU 43: Exhaust fan #7
EQUI 124: Die Cast (DC14)	is controlled by	TREA 26: Smog Hog #2
EQUI 124: Die Cast (DC14)	is controlled by	TREA 63: Nederman Filter 2N2 - STRU 16
EQUI 125: Die Cast (DC15)	sends to	STRU 16: Smog Hog #2 Stack
EQUI 125: Die Cast (DC15)	sends to	STRU 50: Exhaust fan #8
EQUI 125: Die Cast (DC15)	is controlled by	TREA 26: Smog Hog #2
EQUI 125: Die Cast (DC15)	is controlled by	TREA 63: Nederman Filter 2N2 - STRU 16
EQUI 126: Die Cast (DC21)	sends to	STRU 16: Smog Hog #2 Stack
EQUI 126: Die Cast (DC21)	sends to	STRU 50: Exhaust fan #8
EQUI 126: Die Cast (DC21)	is controlled by	TREA 26: Smog Hog #2
EQUI 126: Die Cast (DC21)	is controlled by	TREA 62: Nederman Filter 2N1 - STRU 16
EQUI 127: Die Cast (DC08)	sends to	STRU 17: Smog Hog #3 Stack
EQUI 127: Die Cast (DC08)	sends to	STRU 47: Exhaust fan #4
EQUI 127: Die Cast (DC08)	is controlled by	TREA 27: Smog Hog #3
EQUI 127: Die Cast (DC08)	is controlled by	TREA 64: Nederman Filter 3N - STRU 17
EQUI 128: Die Cast (DC10)	sends to	STRU 17: Smog Hog #3 Stack
EQUI 128: Die Cast (DC10)	sends to	STRU 47: Exhaust fan #4
EQUI 128: Die Cast (DC10)	is controlled by	TREA 27: Smog Hog #3
EQUI 128: Die Cast (DC10)	is controlled by	TREA 64: Nederman Filter 3N - STRU 17
EQUI 129: Die Cast (DC17)	sends to	STRU 17: Smog Hog #3 Stack
EQUI 129: Die Cast (DC17)	sends to	STRU 47: Exhaust fan #4
EQUI 129: Die Cast (DC17)	is controlled by	TREA 27: Smog Hog #3
EQUI 129: Die Cast (DC17)	is controlled by	TREA 64: Nederman Filter 3N - STRU 17
EQUI 130: Die Cast (DC18)	sends to	STRU 44: Exhaust fan #1
EQUI 130: Die Cast (DC18)	sends to	STRU 74: Smog Hog #5 Stack
EQUI 130: Die Cast (DC18)	is controlled by	TREA 65: Nederman Device 5N - STRU 74
EQUI 130: Die Cast (DC18)	is controlled by	TREA 78: Smog Hog #5
EQUI 131: Die Cast (DC36)	sends to	STRU 44: Exhaust fan #1
EQUI 131: Die Cast (DC36)	sends to	STRU 74: Smog Hog #5 Stack
EQUI 131: Die Cast (DC36)	is controlled by	TREA 65: Nederman Device 5N - STRU 74
EQUI 131: Die Cast (DC36)	is controlled by	TREA 78: Smog Hog #5
EQUI 132: Die Cast (DC37)	sends to	STRU 20: Smog Hog #6 Stack
EQUI 132: Die Cast (DC37)	sends to	STRU 44: Exhaust fan #1
EQUI 132: Die Cast (DC37)	is controlled by	TREA 30: Smog Hog #6
EQUI 132: Die Cast (DC37)	is controlled by	TREA 66: Nederman

SI ID: Description	Relationship type	Related SI ID: Description
		Filter 6N - STRU 20
EQUI 133: Die Cast (DC25)	sends to	STRU 20: Smog Hog #6 Stack
EQUI 133: Die Cast (DC25)	sends to	STRU 44: Exhaust fan #1
EQUI 133: Die Cast (DC25)	is controlled by	TREA 30: Smog Hog #6
EQUI 133: Die Cast (DC25)	is controlled by	TREA 66: Nederman Filter 6N - STRU 20
EQUI 134: Die Cast (DC22)	sends to	STRU 44: Exhaust fan #1
EQUI 134: Die Cast (DC22)	sends to	STRU 75: Smog Hog #8 Stack
EQUI 134: Die Cast (DC22)	is controlled by	TREA 67: Nederman Device 8N - STRU 75
EQUI 134: Die Cast (DC22)	is controlled by	TREA 79: Smog-Hog #8
EQUI 135: Die Cast (DC35)	sends to	STRU 44: Exhaust fan #1
EQUI 135: Die Cast (DC35)	sends to	STRU 75: Smog Hog #8 Stack
EQUI 135: Die Cast (DC35)	is controlled by	TREA 67: Nederman Device 8N - STRU 75
EQUI 135: Die Cast (DC35)	is controlled by	TREA 79: Smog-Hog #8
EQUI 136: Die Cast (DC32)	sends to	STRU 23: Smog Hog #9 Stack
EQUI 136: Die Cast (DC32)	sends to	STRU 44: Exhaust fan #1
EQUI 136: Die Cast (DC32)	is controlled by	TREA 33: Smog Hog #9
EQUI 136: Die Cast (DC32)	is controlled by	TREA 68: Nederman Filter 9N - STRU 23
EQUI 137: Die Cast (DC26)	sends to	STRU 24: Smog Hog #10 Stack
EQUI 137: Die Cast (DC26)	sends to	STRU 45: Exhaust fan #2
EQUI 137: Die Cast (DC26)	is controlled by	TREA 34: Smog Hog #10
EQUI 137: Die Cast (DC26)	is controlled by	TREA 69: Nederman Filter 10N - STRU 24
EQUI 138: Die Cast (DC27)	sends to	STRU 24: Smog Hog #10 Stack
EQUI 138: Die Cast (DC27)	sends to	STRU 45: Exhaust fan #2
EQUI 138: Die Cast (DC27)	is controlled by	TREA 34: Smog Hog #10
EQUI 138: Die Cast (DC27)	is controlled by	TREA 69: Nederman Filter 10N - STRU 24
EQUI 139: Die Cast (DC16)	sends to	STRU 25: Smog Hog #11 Stack
EQUI 139: Die Cast (DC16)	sends to	STRU 45: Exhaust fan #2
EQUI 139: Die Cast (DC16)	is controlled by	TREA 35: Smog Hog #11
EQUI 139: Die Cast (DC16)	is controlled by	TREA 70: Nederman Filter 11N - STRU 25
EQUI 140: Die Cast (DC28)	sends to	STRU 25: Smog Hog #11 Stack
EQUI 140: Die Cast (DC28)	sends to	STRU 45: Exhaust fan #2
EQUI 140: Die Cast (DC28)	is controlled by	TREA 35: Smog Hog #11
EQUI 140: Die Cast (DC28)	is controlled by	TREA 70: Nederman Filter 11N - STRU 25
EQUI 141: Die Cast (DC29)	sends to	STRU 26: Smog Hog #12 Stack
EQUI 141: Die Cast (DC29)	sends to	STRU 45: Exhaust fan #2
EQUI 141: Die Cast (DC29)	is controlled by	TREA 36: Smog Hog #12
EQUI 141: Die Cast (DC29)	is controlled by	TREA 71: Nederman

SI ID: Description	Relationship type	Related SI ID: Description
		Filter 12N1 - STRU 26
EQUI 142: Die Cast (DC19)	sends to	STRU 26: Smog Hog #12 Stack
EQUI 142: Die Cast (DC19)	sends to	STRU 46: Exhaust fan #3
EQUI 142: Die Cast (DC19)	is controlled by	TREA 36: Smog Hog #12
EQUI 142: Die Cast (DC19)	is controlled by	TREA 72: Nederman Filter 12N2 - STRU 26
EQUI 143: Die Cast (DC34)	sends to	STRU 26: Smog Hog #12 Stack
EQUI 143: Die Cast (DC34)	sends to	STRU 46: Exhaust fan #3
EQUI 143: Die Cast (DC34)	is controlled by	TREA 36: Smog Hog #12
EQUI 143: Die Cast (DC34)	is controlled by	TREA 71: Nederman Filter 12N1 - STRU 26
EQUI 146: Die Cast (DC42)	sends to	STRU 30: Smog Hog #16 Stack
EQUI 146: Die Cast (DC42)	sends to	STRU 53: Exhaust fan #11
EQUI 146: Die Cast (DC42)	is controlled by	TREA 39: Smog Hog #16
EQUI 146: Die Cast (DC42)	is controlled by	TREA 73: Nederman Filter 16N - STRU 30
EQUI 147: Die Cast (DC38)	sends to	STRU 31: Smog Hog #17 Stack
EQUI 147: Die Cast (DC38)	sends to	STRU 52: Exhaust fan #10
EQUI 147: Die Cast (DC38)	is controlled by	TREA 40: Smog Hog #17
EQUI 147: Die Cast (DC38)	is controlled by	TREA 74: Nederman Filter 17N - STRU 31

SI ID: Description	Relationship type	Related SI ID: Description
EQUI 149: Die Cast (DC40)	sends to	STRU 32: Smog Hog #18 Stack
EQUI 149: Die Cast (DC40)	sends to	STRU 51: Exhaust fan #9
EQUI 149: Die Cast (DC40)	is controlled by	TREA 41: Smog Hog #18
EQUI 149: Die Cast (DC40)	is controlled by	TREA 75: Nederman Filter 18N - STRU 32
EQUI 150: Die Cast (DC48)	sends to	STRU 32: Smog Hog #18 Stack
EQUI 150: Die Cast (DC48)	sends to	STRU 53: Exhaust fan #11
EQUI 150: Die Cast (DC48)	is controlled by	TREA 41: Smog Hog #18
EQUI 150: Die Cast (DC48)	is controlled by	TREA 75: Nederman Filter 18N - STRU 32
EQUI 152: Die Cast (DC41)	sends to	STRU 33: Smog Hog #19 Stack
EQUI 152: Die Cast (DC41)	sends to	STRU 51: Exhaust fan #9
EQUI 152: Die Cast (DC41)	is controlled by	TREA 42: Smog Hog #19
EQUI 152: Die Cast (DC41)	is controlled by	TREA 76: Nederman Filter 19N - STRU 33
EQUI 153: Die Cast (DC44)	sends to	STRU 34: Smog Hog #20 Stack
EQUI 153: Die Cast (DC44)	sends to	STRU 56: Exhaust fan #14
EQUI 153: Die Cast (DC44)	is controlled by	TREA 43: Smog Hog #20
EQUI 153: Die Cast (DC44)	is controlled by	TREA 77: Nederman Filter 20N - STRU 34
EQUI 154: Die Cast (DC45)	sends to	STRU 34: Smog Hog #20 Stack

SI ID: Description	Relationship type	Related SI ID: Description
EQUI 154: Die Cast (DC45)	sends to	STRU 51: Exhaust fan #9
EQUI 154: Die Cast (DC45)	is controlled by	TREA 43: Smog Hog #20
EQUI 154: Die Cast (DC45)	is controlled by	TREA 77: Nederman Filter 20N - STRU 34
EQUI 155: Die Cast (DC52)	sends to	STRU 26: Smog Hog #12 Stack
EQUI 155: Die Cast (DC52)	sends to	STRU 46: Exhaust fan #3
EQUI 155: Die Cast (DC52)	is controlled by	TREA 36: Smog Hog #12
EQUI 155: Die Cast (DC52)	is controlled by	TREA 72: Nederman Filter 12N2 - STRU 26
EQUI 156: Die Cast (DC50)	sends to	STRU 33: Smog Hog #19 Stack
EQUI 156: Die Cast (DC50)	sends to	STRU 51: Exhaust fan #9
EQUI 156: Die Cast (DC50)	is controlled by	TREA 42: Smog Hog #19
EQUI 156: Die Cast (DC50)	is controlled by	TREA 76: Nederman Filter 19N - STRU 33
EQUI 157: Die Cast (DC51)	sends to	STRU 16: Smog Hog #2 Stack
EQUI 157: Die Cast (DC51)	sends to	STRU 56: Exhaust fan #14
EQUI 157: Die Cast (DC51)	is controlled by	TREA 26: Smog Hog #2
EQUI 157: Die Cast (DC51)	is controlled by	TREA 62: Nederman Filter 2N1 - STRU 16
EQUI 158: Die Cast (DC53)	sends to	STRU 30: Smog Hog #16 Stack
EQUI 158: Die Cast (DC53)	sends to	STRU 52: Exhaust fan #10
EQUI 158: Die Cast (DC53)	is controlled by	TREA 39: Smog Hog #16
EQUI 158: Die Cast (DC53)	is controlled by	TREA 73: Nederman Filter 16N - STRU 30
EQUI 160: Billet Saw	sends to	STRU 35: Smog Hog #21 Stack
EQUI 166: Coating Room Bulk Solvent Tank	sends to	STRU 73: Battery Terminal Post Coater Stack
EQUI 167: Solvent Vapor Remediation System	sends to	STRU 41: Solvent Vapor Remediation System Stack
EQUI 167: Solvent Vapor Remediation System	is controlled by	TREA 50: Carbon Canister 1
EQUI 167: Solvent Vapor Remediation System	is controlled by	TREA 51: Carbon Canister 2
EQUI 168: Building Management System		
EQUI 169: Coating Room 1 Pressure Drop Gauge	is monitored by	EQUI 168: Building Management System
EQUI 170: Coating Room 2 Pressure Drop Gauge	is monitored by	EQUI 168: Building Management System
EQUI 171: Coating Room 3 Pressure Drop Gauge	is monitored by	EQUI 168: Building Management System
EQUI 172: Battery Terminal Post Coater 29	sends to	STRU 53: Exhaust fan #11
EQUI 173: Coating Room Soaker Tank	sends to	STRU 73: Battery Terminal Post Coater Stack
EQUI 174: Solvent Distillation Unit	sends to	STRU 59: Exhaust fan #12
EQUI 176: VOC CEMS (STRU 73)		
EQUI 177: Roof-top Unit 1N		

SI ID: Description	Relationship type	Related SI ID: Description
EQUI 178: Roof-top Unit 2N		
EQUI 179: Roof-top Unit 3N		
EQUI 180: Roof-top Unit 4N		
EQUI 181: Roof-top Unit 5N		
EQUI 182: Roof-top Unit 6N		
EQUI 183: Roof-top Unit 7N		
EQUI 184: Roof-top Unit 8N		
EQUI 185: Roof-top Unit 9N		
EQUI 186: Roof-top Unit 10N		
EQUI 187: Roof-top Unit 11N		
EQUI 188: Roof-top Unit 12N		
EQUI 189: Roof-top Unit 13N		
EQUI 190: Roof-top Unit 14N		
EQUI 191: Roof-top Unit 15N		
EQUI 192: Roof-top Unit 16N		
EQUI 193: Roof-top Unit 17N		
EQUI 194: Roof-top Unit 18N		
EQUI 195: Roof-top Unit 19N		
EQUI 196: Roof-top Unit 20N		
EQUI 197: Roof-top Unit 21N		
EQUI 198: Make-up Air Unit 12N		
EQUI 199: Make-up Air Unit 13N		
EQUI 200: Make-up Air Unit 14N		
EQUI 201: Make-up Air Unit 15N		
EQUI 202: Make-up Air Unit 16N		
EQUI 203: Space Heater 1N		
EQUI 204: Space Heater 2N		
EQUI 205: Space Heater 3N		
EQUI 206: Space Heater 4N		
EQUI 207: Space Heater 5N		
EQUI 208: Roof-top Unit 1S		
EQUI 209: Roof-top Unit 2S		
EQUI 210: Roof-top Unit 3S		
EQUI 211: Roof-top Unit 4S		
EQUI 212: Roof-top Unit 5S		
EQUI 213: Roof-top Unit 6S		
EQUI 214: Roof-top Unit 7S		
EQUI 215: Roof-top Unit 8S		
EQUI 216: Roof-top Unit 9S		
EQUI 217: Make-up Air Unit 1S		
EQUI 218: Make-up Air Unit 2S		
EQUI 219: Battery Terminal Post Coater 33	sends to	STRU 73: Battery Terminal Post Coater Stack
EQUI 219: Battery Terminal Post Coater 33	is controlled by	TREA 58: HEPA Filter - EQUI 219
EQUI 220: Battery Terminal Post Coater 34	sends to	STRU 73: Battery Terminal Post Coater Stack
EQUI 220: Battery Terminal Post Coater 34	is controlled by	TREA 59: HEPA Filter - EQUI 220
EQUI 221: Tin Melt Pot	sends to	STRU 1: Smog Hog #15 Stack
EQUI 221: Tin Melt Pot	is controlled by	TREA 1: Smog Hog #15

SI ID: Description	Relationship type	Related SI ID: Description
EQUI 221: Tin Melt Pot	is controlled by	TREA 60: Nederman Filter 15N - STRU 1
EQUI 222: Natural Gas Bake Oven	sends to	STRU 70: Natural Gas Bake Oven Stack
EQUI 223: Coining Booth 1	sends to	STRU 71: Coining Booth Stacks
EQUI 224: Coining Booth 2	sends to	STRU 71: Coining Booth Stacks
EQUI 225: Coining Booth 3	sends to	STRU 71: Coining Booth Stacks
EQUI 226: Coining Booth 4	sends to	STRU 71: Coining Booth Stacks
EQUI 227: Coining Booth 5	sends to	STRU 71: Coining Booth Stacks
EQUI 228: Coining Booth 6	sends to	STRU 71: Coining Booth Stacks
EQUI 229: Coining Booth 7	sends to	STRU 71: Coining Booth Stacks
EQUI 230: Coining Booth 8	sends to	STRU 71: Coining Booth Stacks
EQUI 231: Coining Booth 9	sends to	STRU 71: Coining Booth Stacks
EQUI 232: Coining Booth 10	sends to	STRU 71: Coining Booth Stacks
EQUI 233: Battery Terminal Post Coater 19	sends to	STRU 50: Exhaust fan #8
EQUI 234: Make-up Air Unit 17N		
EQUI 235: Roof-top Unit 10S		
EQUI 236: Roof-top Unit 11S		
EQUI 240: Prototype Coater	sends to	STRU 72: Fume Hood Vent

SI ID: Description	Relationship type	Related SI ID: Description
FUGI 1: Cooling Tower 1 (CT1)		
FUGI 2: Cooling Tower 2 (CT2)		
FUGI 3: Paved Roads		
FUGI 4: Cooling Tower #3 (CT3)		
STRU 1: Smog Hog #15 Stack		
STRU 4: Emergency Generator Engine Stack		
STRU 15: Smog Hog #1 Stack		
STRU 16: Smog Hog #2 Stack		
STRU 17: Smog Hog #3 Stack		
STRU 20: Smog Hog #6 Stack		
STRU 23: Smog Hog #9 Stack		
STRU 24: Smog Hog #10 Stack		
STRU 25: Smog Hog #11 Stack		
STRU 26: Smog Hog #12 Stack		
STRU 30: Smog Hog #16 Stack		
STRU 31: Smog Hog #17 Stack		
STRU 32: Smog Hog #18 Stack		
STRU 33: Smog Hog #19 Stack		
STRU 34: Smog Hog #20 Stack		
STRU 35: Smog Hog #21 Stack		
STRU 38: North Building		
STRU 41: Solvent Vapor Remediation System Stack		
STRU 42: South Building		
STRU 43: Exhaust fan #7		

SI ID: Description	Relationship type	Related SI ID: Description
STRU 44: Exhaust fan #1		
STRU 45: Exhaust fan #2		
STRU 46: Exhaust fan #3		
STRU 47: Exhaust fan #4		
STRU 48: Exhaust fan #5		
STRU 49: Exhaust fan #6		
STRU 50: Exhaust fan #8		
STRU 51: Exhaust fan #9		
STRU 52: Exhaust fan #10		
STRU 53: Exhaust fan #11		
STRU 56: Exhaust fan #14		
STRU 57: Shipping vent 20		
STRU 59: Exhaust fan #12		
STRU 60: Exhaust fan #13		
STRU 68: Melt Pot Room Vent		
STRU 69: Doe Run Melt Pot Natural Gas Vent		
STRU 70: Natural Gas Bake Oven Stack		
STRU 71: Coining Booth Stacks		
STRU 72: Fume Hood Vent		
STRU 73: Battery Terminal Post Coater Stack	is monitored by	EQUI 176: VOC CEMS (STRU 73)
STRU 74: Smog Hog #5 Stack		
STRU 75: Smog Hog #8 Stack		
TREA 1: Smog Hog #15		
TREA 25: Smog Hog #1		
TREA 26: Smog Hog #2		
TREA 27: Smog Hog #3		

SI ID: Description	Relationship type	Related SI ID: Description
TREA 30: Smog Hog #6		
TREA 33: Smog Hog #9		
TREA 34: Smog Hog #10		
TREA 35: Smog Hog #11		
TREA 36: Smog Hog #12		
TREA 39: Smog Hog #16		
TREA 40: Smog Hog #17		
TREA 41: Smog Hog #18		
TREA 42: Smog Hog #19		
TREA 43: Smog Hog #20		
TREA 50: Carbon Canister 1	is controlled in series by	TREA 51: Carbon Canister 2
TREA 51: Carbon Canister 2		
TREA 52: HEPA Filter - Tool Room 1 Abrasive Blasting		
TREA 53: HEPA Filter - Tool Room 2 Abrasive Blasting		
TREA 54: HEPA Filter - DC Abrasive Blasting		
TREA 55: HEPA Filter - EQUI 84		
TREA 56: HEPA Filter - EQUI 88		
TREA 57: HEPA Filter - EQUI 95		
TREA 58: HEPA Filter - EQUI 219		
TREA 59: HEPA Filter - EQUI 220		
TREA 60: Nederman Filter 15N - STRU 1	is controlled in series by	TREA 1: Smog Hog #15
TREA 61: Nederman Filter 1N - STRU 15	is controlled in series by	TREA 25: Smog Hog #1
TREA 62: Nederman Filter 2N1 - STRU 16	is controlled in series by	TREA 26: Smog Hog #2
TREA 63: Nederman Filter 2N2 - STRU 16	is controlled in series by	TREA 26: Smog Hog #2

SI ID: Description	Relationship type	Related SI ID: Description
TREA 64: Nederman Filter 3N - STRU 17	is controlled in series by	TREA 27: Smog Hog #3
TREA 65: Nederman Device 5N - STRU 74	is controlled in series by	TREA 78: Smog Hog #5
TREA 66: Nederman Filter 6N - STRU 20	is controlled in series by	TREA 30: Smog Hog #6
TREA 67: Nederman Device 8N - STRU 75	is controlled in series by	TREA 79: Smog-Hog #8
TREA 68: Nederman Filter 9N - STRU 23	is controlled in series by	TREA 33: Smog Hog #9
TREA 69: Nederman Filter 10N - STRU 24	is controlled in series by	TREA 34: Smog Hog #10
TREA 70: Nederman Filter 11N - STRU 25	is controlled in series by	TREA 35: Smog Hog #11
TREA 71: Nederman Filter 12N1 - STRU 26	is controlled in series by	TREA 36: Smog Hog #12
TREA 72: Nederman Filter 12N2 - STRU 26	is controlled in series by	TREA 36: Smog Hog #12
TREA 73: Nederman Filter 16N - STRU 30	is controlled in series by	TREA 39: Smog Hog #16
TREA 74: Nederman Filter 17N - STRU 31	is controlled in series by	TREA 40: Smog Hog #17
TREA 75: Nederman Filter 18N - STRU 32	is controlled in series by	TREA 41: Smog Hog #18
TREA 76: Nederman Filter 19N - STRU 33	is controlled in series by	TREA 42: Smog Hog #19
TREA 77: Nederman Filter 20N - STRU 34	is controlled in series by	TREA 43: Smog Hog #20
TREA 78: Smog Hog #5		
TREA 79: Smog-Hog #8		

5. Limits and other requirements

Requirement number	Requirement and citation
TFAC 1	**Water Gremlin Co**
5.1.1	Permit Appendices: This permit contains appendices as listed in the permit Table of Contents. The Permittee shall comply with all applicable requirements contained in the following appendices or any finalized alternative plans and procedures allowed under the Permit or MPCA rules and regulations. If there is a conflict between the permit and the appendices, the Permit terms shall apply: Appendix A: Insignificant Activities and General Requirements; Appendix B: Maximum Material Content, Emissions Calculations Assumptions, and Analytical Methods for VOC, Water-Based, and Ultraviolet-Cured (UV) Coating Appendix C: NAAQS and AERA Modeling Parameters; Appendix D: Emission Factors for Lead Processing Units; Appendix E: Performance Test Recordkeeping; Appendix F: VOC Ambient Air Monitoring Plan; Appendix G: General Public Preclusion Plan; Appendix H: Minimum requirements for a revised VOC and TO-15 ambient monitoring; and Appendix I: Equipment Inventory at the time of permit issuance; Appendix J: 40 CFR pt. 60, subp. IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines; and Appendix K: 40 CFR pt. 60, subp. A - General Provisions. [Minn. R. 7007.0800, subp. 2(A) & (B)]
5.1.2	The Permittee must comply with Minn. Stat. 116.385. The Permittee may not use trichloroethylene (TCE) at its permitted facility including in any manufacturing, processing, or cleaning processes, except as described in Minn. Stat. 116.385, subd. 2(b) and 4. The permittee used TCE before the issuance of permit No, 12300341-101 and has replaced TCE; any chemical replacing TCE must be less toxic to human health and reviewed in a form determined and approved by the Commissioner of the Pollution Control Agency. This is a state-only requirement and is not enforceable by the U.S. Environmental Protection Agency (EPA) Administrator and citizens under the Clean Air Act. [Minn. R. 7007.0100, subp. 7(X), Minn. Stat. 116.385]
5.1.3	This permit establishes limits on the facility to keep it a minor source under New Source Review, Part 70, and NESHAPs. The Permittee cannot make any change at the source that would require a change to a Title I Condition or a synthetic minor limit that ensures the facility avoid a major source status under New Source Review, Part 70, and NESHAPs until a major permit amendment has been issued. This includes changes that might otherwise qualify as insignificant modifications and minor or moderate amendments unless allowed under applicable laws and regulations. [Minn. R. 7007.0100, subp. 25(A), Minn. R. 7007.1500, subp. 1(C), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 63.2, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.1.4	Equipment Labeling: The Permittee shall permanently affix a unique number to each emissions unit for tracking purposes. Each number shall correlate the unit to the appropriate Subject Item number used in this permit. The number can be affixed by placard, stencil, or other means. The number shall be maintained so that it is readable ~~and visible at all times~~ from a safe distance and/or otherwise designated on facility maps. If equipment is added, it shall be given a new unique number; numbers from replaced or removed equipment shall not be reused. [Minn. R. 7007.0800, subp. 2(A)]

5.1.5	Equipment Inventory: The facility equipment inventory at the time of permit issuance is listed in Appendix I. The Permittee shall maintain a written revision to Appendix I with a current list of all emissions units, operating monitors, and control equipment on site. The Permittee shall update the list in Appendix I to include any replaced, modified, or new equipment ~~prior to making the change~~. The list shall correlate the units to the Subject Item numbers used in this permit and shall include the data on GI-04, GI-05B, GI-05C, and GI-05F. The date of construction shall be the date the change was made for replaced, modified, or new equipment as defined under applicable laws and regulations. [Minn. R. 7007.0800, subp. 2(A)]

Requirement number	Requirement and citation
5.1.6	PERMIT SHIELD: Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements. This permit shall not alter or affect the liability of the Permittee for any violation of applicable requirements prior to or at the time of permit issuance. [Minn. R. 7007.1800(A)(2)]
5.1.7	Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted. [Minn. R. 7011.0020]
5.1.8	Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated. [Minn. R. 7007.0800, subp. 16(J), Minn. R. 7007.0800, subp. 2(A) & (B)]
5.1.9	Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment and practices, and the records kept to demonstrate plan implementation. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 16(J)]
5.1.10	Operation Changes: In any shutdown, breakdown, or ~~deviation~~ malfunction the Permittee must immediately or as soon as possible considering plant and personnel safety take all practical steps to correct or modify operations to reduce the emission of any regulated air pollutant that would reasonably be expected to exceed applicable permit limits. No emissions units that have an unreasonable shutdown or breakdown frequency of ~~process or~~emission control equipment are permitted to operate until corrected. [Minn. R. 7019.1000, subp. 4]
5.1.11	Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150. [Minn. R. 7011.0150]
5.1.12	Noise: The Permittee shall comply with ~~the~~ applicable noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Minn. R. 7030.0010- 7030.0080]
5.1.13	Inspections: The Permittee shall comply with applicable ~~the~~ inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A). [Minn. R. 7007.0800, subp. 9(A)]
5.1.14	The Permittee shall comply with applicable~~the~~ General Conditions listed in Minn. R. 7007.0800, subp. 16. [Minn. R. 7007.0800, subp. 16]
5.1.15	Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in this permit or allowed under applicable laws and regulations. [Minn. R. ch. 7017]
5.1.16	Performance Test Notifications and Submittals: Performance Test Notification and Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due seven days before each Performance Test Performance Test Report: due 45 days after each Performance Test

Requirement number	Requirement and citation
	The Notification, Test Plan, and Test Report must be submitted in a format specified by the commissioner. [Minn. R. 7017.2017, Minn. R. 7017.2030, subps. 1-4, Minn. R. 7017.2035, subps. 1-2]
5.1.17	Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as stated in the MPCA's Notice of Compliance letter granting preliminary approval. Preliminary approval is based on formal review of a subsequent performance test on the same unit as specified by Minn. R. 7017.2025, subp. 3. The limit is final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025, subp. 3]
5.1.18	Monitoring Equipment Calibration - The Permittee shall either: 1. Calibrate or replace required monitoring equipment every 12 months; or 2. Calibrate at the frequency stated in the manufacturer's specifications. For each monitor, the Permittee shall maintain a record of all calibrations, including the date conducted, and any corrective action that resulted. The Permittee shall include the calibration frequencies, procedures, and manufacturer's specifications (if applicable) in the Operations and Maintenance Plan. Any requirements applying to continuous emission monitors are listed separately in this permit. [Minn. R. 7007.0800, subp. 4(D)]
5.1.19	Operation of Monitoring Equipment: Unless noted elsewhere in this permit, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system. [Minn. R. 7007.0800, subp. 4(D)]
5.1.20	Recordkeeping: Retain all records at the stationary source, unless otherwise specified within this permit, for five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A). [Minn. R. 7007.0800, subp. 5(C)]
5.1.21	Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007.1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350, subp. 2), including records of the emissions resulting from those changes. [Minn. R. 7007.0800, subp. 5(B)]
5.1.22	If the Permittee determines that no permit amendment or notification is required prior to making a change, the Permittee must retain records of all calculations required under Minn. R. 7007.1200. For non-expiring permits, these records shall be kept for a period of five years from the date that the change was made. The records shall be kept at the stationary source for the current calendar year of operation and may be kept at the stationary source or office of the stationary source for all other years. The records may be maintained in either electronic or paper format. [Minn. R. 7007.1200, subp. 4]
5.1.23	Shutdown Notifications: Notify the commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant that would exceed permit limits. If the Permittee does not have advance knowledge of the shutdown, the Permittee must notify the commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in items A, B, and C of Minn. R. 7019.1000, subp. 3. At the time of notification, the Permittee~~owner or operator~~ must inform the commissioner of the cause of the shutdown and the estimated duration. The Permittee~~owner or operator~~ must notify the commissioner when the shutdown is over. [Minn. R. 7019.1000, subp. 3]

Requirement number	Requirement and citation
5.1.24	Breakdown Notifications: Notify the commissioner within 24 hours of a breakdown of more than one hour of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the Permittee~~owner or operator~~. However, notification is not required in the circumstances outlined in items A, B, and C of Minn. R. 7019.1000, subp. 2. At the time of notification or as soon as possible thereafter, the Permittee must inform the commissioner of the cause of the breakdown and the estimated duration. The Permittee must notify the commissioner when the breakdown is over. [Minn. R. 7019.1000, subp. 2]
5.1.25	Notification of Deviations Endangering Human Health or the Environment: Immediately after discovery of the deviation or immediately after when the deviation reasonably should have been discovered, notify the commissioner either orally or by e-mail, or telephone the state duty officer at 800-422-0798 or 651-649-5451, of any deviation from permit conditions that could endanger human health or the environment. [Minn. R. 7019.1000, subp. 1]
5.1.26	Notification of Deviations Endangering Human Health or the Environment Report: Within two working days of discovery, notify the commissioner in writing of any deviation from permit conditions that could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation. [Minn. R. 7019.1000, subp. 1]
5.1.27	Relocation Notification Form: due 48 hours before change in location. Submit notification on a form approved by the Commissioner. [Minn. R. 7007.0800, subp. 12(C)]
5.1.28	Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed. Upon adoption of a new or amended federal applicable requirement, and if there are three or more years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150 - 7007.1500]
5.1.29	Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H). Performance testing deadlines from the General Provisions of 40 CFR pt. 60 and pt. 63 are examples of deadlines for which the MPCA does not have authority to grant extensions and therefore do not meet the requirements of Minn. R. 7007.1400, subp. 1(H). [Minn. R. 7007.1400, subp. 1(H)]
5.1.30	Within 15 days of a request from the Commissioner, the Permittee must provide a complete summary of all performance tests required at the facility including the subject item, pollutant, most recent test date (if applicable), and the date of the next test in an approved format. [Minn. R. 7007.0800, subp. 16(L)]
5.1.31	Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance. Submit in a format specified by the Commissioner. [Minn. R. 7019.3000-7019.3100]
5.1.32	Emission Fees: due 30 days after receipt of an MPCA bill. [Minn. R. 7002.0005-7002.0085]

Requirement number	Requirement and citation
5.1.33	Modeled Parameters for PM10, PM2.5, NO2, and lead NAAQS: The parameters used in NAAQS modeling for Permit No. 12300341-101 are listed in Appendix C of this permit. The parameters describe the operation of the facility at maximum permitted capacity. The purpose of listing the parameters in the appendix is to provide a benchmark for future changes. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
5.1.34	Modeled Parameters for Air Emissions Risk Analysis (AERA): The parameters for 1,2-(trans-) Dichloroethylene and lead used in the AERA for Permit No. 12300341-101 are listed in Appendix C of this permit. The parameters describe the operation of the facility at maximum permitted capacity. The purpose of listing the parameters in the appendix is to provide a benchmark for future changes. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
5.1.35	Equivalent or Better Dispersion (EBD) Modeling Triggers (Modeling Submittal Not Required before the change): Changes that do not require a permit amendment or require an administrative permit amendment do not trigger the EBD Modeling Submittal requirement before the change can be made. The Permittee shall keep updated records on site of all modeled PM10, PM2.5, NO2, and lead parameters and emission rates listed in Appendix C. The updated EBD modeling results must demonstrate compliance with NAAQS for the modeled pollutant. The Permittee shall submit any changes to modeled parameters and emission rates with the next required modeling submittal. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
5.1.36	Updated AERA Triggers (AERA Submittal Not Required before the change): Changes that do not require a permit amendment or require an administrative permit amendment do not trigger the Updated AERA Submittal requirement before the change can be made. The Permittee shall keep updated records on site of all 1,2-(trans-) Dichloroethylene, lead, and other air toxics parameters and emission rates listed in Appendix C. The updated AERA results must demonstrate compliance with the health benchmarks for the modeled pollutants. The Permittee shall submit any changes to AERA parameters and emission rates with the next required AERA submittal. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
5.1.37	Equivalent or Better Dispersion (EBD) Modeling Triggers (Modeling Required): Any changes that affect any modeled PM10, PM2.5, NO2, and lead parameter or emission rate listed in Appendix C, or an addition to the information documented in Appendix C, trigger the EBD Remodeling Submittal requirement. This includes changes that do not require a permit amendment as well as changes that require any type of permit amendment. The updated EBD modeling results must demonstrate compliance with NAAQS for the modeled pollutant. The schedule for EBD Remodeling submittal is defined elsewhere in this permit. Changes made under the Administrative amendment process are excluded from this requirement. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
5.1.38	Updated ~~AERA~~ RASS Triggers (~~AERA~~ RASS Required): Any changes that affect 1,2-(trans-) Dichloroethylene, lead, and other air toxics parameter or emission rate listed in Appendix C, or an addition to the information documented in Appendix C, or the health benchmarks for any of the evaluated chemical of concern have changed to more strict values, or there are new health benchmark values for chemicals of concern used at the facility, trigger the Updated ~~AERA~~ RASS Submittal requirement. This includes changes that do not require a permit amendment as well as changes that require any type of permit amendment. The updated ~~AERA~~ RASS results must demonstrate compliance with the health benchmarks for the modeled pollutants. The schedule for the revised ~~AERA~~ RASS submittal is defined elsewhere in this permit. Changes made under the Administrative amendment process are excluded from this requirement. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
5.1.39	EBD Modeling Submittal at Reissuance: The Permittee shall submit an EBD Modeling Submittal with the permit reissuance application (due as stated elsewhere in this permit) that addresses any changes

Commented [A11]: Unnecessary and burdensome requirement not required by rules. Delete the EBD Modeling Triggers. If a change does not require a permit amendment, any remodeling can wait until the next permit or amendment application.

Commented [A12]: Unnecessary and burdensome requirement not required by rules. Delete the AERA Triggers. If a change does not require a permit amendment, any remodeling and risk re-evaluation can wait until the next permit or amendment application.
To the extent that any risk analysis triggers are retained, it should only involve an updated RASS, as Water Gremlin has only prepared a RASS for this permit, not an AERA.

Commented [A13]: Delete the EBD Modeling Triggers. If a change does not require a permit amendment, any remodeling can wait until the next permit or amendment application.

Requirement number	Requirement and citation
	made during the permit term that did not require a permit amendment but that affected any modeled PM10, PM2.5, NO2, and lead parameter or emission rate documented in Appendix C, or an addition to the information documented in Appendix C and that did not trigger the EBD Modeling Triggers (Modeling Required) requirement. [Minn. R. 7007.0800, A) & (B, Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
5.1.40	Updated ~~AERA~~ RASS Submittal at Reissuance: The Permittee shall submit an Updated ~~AERA~~ RASS Submittal with the permit reissuance application (due as stated elsewhere in this permit) that addresses any changes made during the permit term that did not require a permit amendment but that affected any increase above permit limits in 1,2- (trans-) Dichloroethylene, lead, and other air toxics parameter or emission rate documented in Appendix C, ~~or an addition to the information documented in Appendix C and that did not trigger the Updated AERA Triggers (AERA Required) requirement.~~ [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
5.1.41	EBD Modeling Submittal: For changes meeting the criteria in the EBD Modeling Triggers (Modeling Required) requirement, the Permittee shall submit an EBD modeling submittal in accordance with the current version of the MPCA Air Dispersion Modeling Guidance and shall wait for written approval (for major amendments, in the form of an issued permit amendment; for moderate amendments, in the form of a construction authorization letter) before making such changes. For changes that do not require a moderate or major amendment, but require a minor permit amendment, written approval of the EBD modeling may be given before permit issuance; however, this approval applies only to the EBD modeling and not to any other changes. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
5.1.42	Updated ~~AERA~~ RASS Submittal: For changes meeting the criteria in the Updated ~~AERA~~ RASS Triggers (~~AERA~~ RASS Required) requirement, the Permittee shall submit an updated ~~AERA~~ RASS submittal in accordance with the current version of the MPCA Air Dispersion Modeling Guidance and shall wait for written approval (for major amendments, in the form of an issued permit amendment; for moderate amendments, in the form of a construction authorization letter) before making such changes. For changes that do not require a moderate or major amendment, but require a minor permit amendment, written approval of the updated ~~AERA~~ RASS may be given before permit issuance; however, this approval applies only to the updated ~~AERA~~ RASS and not to any other changes. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
5.1.43	EBD Modeling Submittal Content: The information submitted must include, for stack and vent sources, source emission rate, location, height, diameters, exit velocity, exit temperature, discharge direction, use of rain caps or rain hats, and, if applicable, locations and dimensions of nearby buildings. For non-stack/vent sources, this includes the source emission rate, location, size and shape, release height, and, if applicable, any emission rate scalars, and the initial lateral dimensions and initial vertical dimensions and adjacent building heights. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
5.1.44	Updated ~~AERA~~ RASS Submittal Content: The information submitted must include, for stack and vent sources, source emission rate, location, height, diameters, exit velocity, exit temperature, discharge direction, use of rain caps or rain hats, and, if applicable, locations and dimensions of nearby buildings. For non-stack/vent sources, this includes the source emission rate, location, size and shape, release height, and, if applicable, any emission rate scalars, and the initial lateral dimensions and initial vertical dimensions and adjacent building heights. If this information is being submitted with a concurrent EBD modeling submittal, this information only needs to be listed once in the combined submittal. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
5.1.45	Outdated EBD Baseline Modeling: Prior to conducting the EBD analysis, the Permittee shall use the current version of the MPCA Air Dispersion Modeling Guidance to determine if the Baseline Modeling (the most recent refined modeling demonstration) is consistent with the current version of the MPCA Air Dispersion Modeling Guidance (not outdated). The Permittee may verify if the Baseline modeling

Commented [A14]: The cited rule does not contain a specific requirement with respect to this EBD submittal.

Commented [A15]: Delete the AERA Triggers. If a change does not require a permit amendment, any remodeling and risk re-evaluation can wait until the next permit or amendment application.
To the extent that any risk analysis updates are retained, it should only involve an updated RASS, as Water Gremlin has only prepared a RASS for this permit, not an AERA.

Commented [A16]: The term "Updated AERA" is not defined. It is unclear if this requirement is solely for an updated RASS. Water Gremlin has not prepared an AERA for the facility to date.

Commented [A17]: Delete. This is not standard practice. If a change does not require a permit amendment, any remodeling and risk re-evaluation can wait until the next permit or amendment application.

Commented [A18]: Delete. This is not standard practice. If a change does not require a permit amendment, any remodeling and risk re-evaluation can wait until the next permit or amendment application. Also, the term "Updated AERA" is not defined and is unclear from agency permit staff. Water Gremlin has only submitted RASS to date.

Commented [A19]: Delete as repetitive: modeling and AERA use the same information. MPCA does not need this information twice. No AERA prepared to date.

Commented [A20]: This is vague and ambiguous. There is no indication of what "outdated" means. The Permittee should not be subject to subjective standards and unclear triggering requirements.

Requirement number	Requirement and citation
	is consistent with current Guidance during the approval process for the modeling protocol. If the Baseline Modeling is outdated, the Permittee shall update the Baseline Modeling to be consistent with the current version of the MPCA Air Dispersion Modeling Guidance. The updated modeling will become the new Baseline Modeling. This requirement does not require the Permittee to complete a new refined modeling demonstration using the revisions made for the EBD demonstration. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
5.1.46	Outdated Baseline ~~AERA~~RASS: Prior to conducting the ~~AERA~~ RASS analysis, the Permittee shall use the current version of the MPCA Air Dispersion Modeling Guidance to determine if the Baseline ~~AERA~~ RASS (the most recent ~~AERA~~ RASS demonstration) is consistent with the current version of the MPCA Air Dispersion Modeling Guidance (not outdated). The permittee may verify if the Baseline ~~AERA~~ RASS is consistent with current Guidance during the approval process for the modeling and ~~AERA~~ RASS protocol. If the Baseline ~~AERA~~ RASS is outdated, the Permittee shall update the Baseline ~~AERA~~ RASS to be consistent with the current version of the MPCA Air Dispersion Modeling Guidance. The updated ~~AERA~~ RASS will become the new Baseline ~~AERA~~RASS. This requirement does not require the Permittee to complete a new ~~AERA~~ RASS using the revisions made for the EBD demonstration. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
5.1.47	EBD Modeling Results: The dispersion characteristics due to the revisions of the information in Appendix C must be equivalent to or better than the dispersion characteristics modeled in the most recent approved modeling submittal that shows compliance with NAAQS, unless the model still demonstrates compliance with the applicable emission limit. The Permittee shall, if necessary, demonstrate this equivalency in the proposal. The requirements in this condition do not apply if the permittee has conducted refined modeling using the revised parameters and has demonstrated modeled compliance with the applicable emission limits. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
5.1.48	Updated ~~AERA~~ RASS Results: The dispersion characteristics due to the revisions of the information in Appendix C must be equivalent to or better than the dispersion characteristics modeled in the most recent approved modeling submittal that shows modeled compliance with NAAQS and health benchmarks The Permittee shall demonstrate this equivalency in the proposal. The requirements in this condition do not apply if the permittee has conducted refined modeling using the revised parameters and has demonstrated compliance with the applicable emission limits. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
5.1.49	Computer Dispersion Modeling Triggers for PM10, PM2.5, NO2, and lead NAAQS: The Permittee shall conduct a refined remodeling analysis in accordance with the Computer Dispersion Modeling requirements of this permit and the current version of the MPCA Air Dispersion Modeling Guidance if: (1) the results of the EBD modeling analysis do not demonstrate equivalent or better dispersion characteristics; (2) a conclusion cannot readily be made about the dispersion, or (3) the criteria in the EBD Modeling Triggers requirement are met and the Permittee has previously conducted three successive EBD analyses using the same Baseline Modeling, unless written approval is obtained from MPCA to get an exception from this maximum number of allowed EBD analyses. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
5.1.50	Computer Dispersion Modeling/~~AERA~~ RASS Protocol: due 180 days after receipt of written MPCA request for PM10, PM2.5, NO2, and/or lead NAAQS, and/or ~~AERA~~ RASS refined modeling. The Permittee shall submit a Computer Dispersion Modeling/AERA Protocol that is complete and approvable by MPCA by the deadline in this requirement. This protocol will describe the proposed modeling methodology and input data, in accordance with the current version of the MPCA Air Dispersion Modeling Guidance. The protocol must be based on projected operating conditions under the next permit term. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]

Commented [A21]: This is vague and ambiguous. There is no indication of what "outdated" means. The Permittee should not be subject to subjective standards and unclear triggering requirements. Water Gremlin has only prepared a RASS, not an AERA.

Commented [A22]: This condition should provide for a scenario in which the dispersion characteristics are not equivalent or better. The term "equivalent to or better" is vague and ambiguous. It is possible for a stack or vent to have worse dispersion but for the model to still show compliance with the NAAQS/toxics thresholds.

Commented [A23]: This condition should provide for a scenario in which the dispersion characteristics are not equivalent or better. The term "equivalent to or better" is vague and ambiguous. It is possible for a stack or vent to have worse dispersion but for the model to still show compliance with the NAAQS/toxics thresholds.

Commented [A24]: Delete requirement 3. Depending on operational changes, three successive analyses does not necessarily mean full re-modeling is warranted.

Requirement number	Requirement and citation
5.1.51	Computer Dispersion Modeling/~~AERA~~ RASS Protocol: due 60 days after receipt of written MPCA request for revisions to the submitted protocol for PM10, PM2.5, NO2, and/or lead NAAQS, and/or ~~AERA~~ RASS modeling in connection with the permit application, or amendement thereto. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
5.1.52	Computer Dispersion Modeling/~~AERA~~ RASS Results: due 180 days after receipt of written MPCA approval of Computer Dispersion Modeling Protocol for PM10, PM2.5, NO2, and/or lead NAAQS, and/or ~~AERA~~RASS. The Permittee shall submit a final Computer Dispersion Modeling Report that is complete and approvable by MPCA by the deadline in this requirement. The submittal shall adhere to the current version of the MPCA Air Dispersion Modeling Guidance and the approved Computer Dispersion Modeling Protocol. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
5.1.53	~~The Permittee shall continue to conduct VOC and TO-15 Ambient Air Monitoring that was required my MPCA before issuance of Permit No. 12300341-101. Ambient air monitoring shall be conducted in accordance with the MPCA-approved VOC ambient air monitoring plan in the Administrative Order dated January 17, 2020, and included in this permit as Appendix F. This monitoring plan shall continue until the time the MPCA approves a revised ambient monitoring plan. The permittee shall compile 24-hour VOC and TO-15 monitoring results by the last day of each month for the previous monitoring month. The results shall be reported to AQRoutineReport.PCA.state.mn.us and made available to MPCA at any other time. [Minn. R. 7007.0800, subp. 2, Minn. R. 7009.0010-7009.0090, Minn.Stat. 116.07, subd. 4a(a) & 9(2)]~~
5.1.54	~~The Permittee shall submit a revised ambient monitoring plan for VOC and TO-15 Ambient Air Monitoring due within 30 days of permit issuance. The revised ambient monitoring protocol shall address the following as described in Appendix H~~ ~~1) Number and locations of monitoring sites following EPA siting requirements.~~ ~~2) Sampling frequency~~ ~~3) Data submittal frequency~~ ~~4) TO-15 analytes include 1,2 (trans) Dichloroethylene. [Minn. R. 7007.0800, subp. 2, Minn. R. 7009.0010-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]~~
5.1.55	~~The Permittee shall submit a revised Ambient Monitoring Plan: due 60 calendar days after Date of Receipt of written MPCA request for revisions to the submitted Ambient Air Monitoring Plan for VOC and TO-15. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0010-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]~~
5.1.56	~~The Permittee shall conduct VOC and TO-15 Ambient Air Monitoring due within 30 days following approval of revised ambient air monitoring plan. Ambient air monitoring shall be conducted in accordance with the MPCA-approved Revised VOC ambient air monitoring plan. The VOC and TO-15 ambient monitoring may not be interrupted during the transition of ambient monitoring to the revised plan. [Minn. R. 7007.0800, subp. 2, Minn. R. 7009.0010-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]~~
5.1.57	Discontinuation of VOC Ambient Air Monitoring: The Permittee shall operate and maintain the VOC ambient air monitoring network according to the MPCA approved Ambient Air Monitoring Plan until the Commissioner determines that the following criteria have been met: 1) Twenty four months of ambient air monitoring is conducted pursuant to the Ambient Air Monitoring Plan approved by MPCA and implemented as prescribed elsewhere in thispermit; 2) The twenty four months of ambient monitoring shall exclude periods when Water Gremlins shuts down t-DCE coating operations so that the length of the ambient monitoring period represents 24 months of measured ambient concentrations during actual coating operation with t-DCE containing materials. 3) There are no violations of the 1,2-(trans-) Dichloroethylene emission limit during the 24 months of actual coating operation; 4) The facility's 1,2-(trans-) Dichloroethylene emissions are at least 80 percent of the permitted limit or not more than 50 percent of the permitted limit for three consecutive

Commented [A25]: There is no scientific justification for ongoing ambient air monitoring. Water Gremlin has collected (and provided on a simultaneous basis) three years of ambient air data at a cost of more than $1.5MM per year (as required under the Unilateral Administrative Order). Water Gremlin has also provided the MPCA with a compliant model. There is no factual, scientific basis or legal requirement for ambient air monitoring based on the toxicity evaluation, the model and the collection of over two years of data.

The facility has years of data representing operating conditions that validate the facility's tracking spreadsheet. The MPCA is well aware that ambient monitoring is unreliable as monitor results vary not only with, material usage, but with meteorology and outside influences. The facility is meeting detailed tracking and mass-balance requirements.

Commented [A26]: Delete. See above. The risk evaluation, existing data and modeling demonstrate compliance with permit conditions, well below the applicable risk criteria.

Commented [A27]: Delete. See above. Water Gremlin has three years of ambient VOC data monitoring already.

Commented [A28]: Delete. Existing usage data shows the conditions are already being met (coating usage and ambient data).

Commented [A29]: See above. Water Gremlin believes ongoing ambient air monitoring is unnecessary, and has already provided three years of monitoring data.

Commented [A30]: It is counterintuitive and counterproductive to require a high level of usage emissions in order to discontinue monitoring, when the facility has stated its long-term plans to increase UV coating and reduce solvent coating. The trigger for discontinuing ambient monitoring should be tied to reduced VOC-based coating usage. It is illogical to encourage high usage rather than low usage as the company moves away from VOC-based coating.

	months;

Requirement number	Requirement and citation
	~~during the ambient air monitoring period;~~ ~~5) The probability of future long-term average 1,2-(trans-) Dichloroethylene concentrations being above health guidelines is less than 5 percent. The Permittee shall test this requirement by calculating a 95-percent upper confidence limit for the mean concentration at each monitoring site and compare the highest 95-percent upper confidence limit to 80 percent of the health benchmark for 1,2-(trans-) Dichloroethylene, as adapted from EPA Ambient Air Monitoring Network Assessment Guidance (Section 4.1). If the calculated 95-percent upper confidence limit is below 80 percent of the inhalation health benchmark for 1,2-(trans-) Dichloroethylene, ambient air monitoring may be discontinued if all other criteria are met; and~~ ~~6) The permit contains limits that restrict t-DCE/VOC emissions, based on modeled concentrations below inhalation health benchmarks as approved by MPCA. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]~~
5.1.58	General Public Preclusion Plan - Boundary Map Within ~~180~~ 270 days after Permit Issuance, the Permittee shall use fencing, control access points, restriction signage, and remote monitoring as specified in Appendix G to maintain control over the fence line. Appendix G to this permit is a map that depicts the boundary at which the access of the general public can be controlled and compliance with the National Ambient Air Quality Standards (NAAQS) can be demonstrated. Appendix G identifies the forms of control the Permittee will use to restrict access to the general public along portions of the fence line. The general public does not include employees or other categories of people who have been directly authorized by the property owner to enter or remain on the property for a limited period of time and for a specific purpose. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7007.0800, subp. 4(D), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.1.59	General Public Preclusion Plan This Plan shall, at a minimum, contain the following information: 1. A map of the facility that clearly displays the ambient air boundary. The map must indicate how access is precluded for each section of the boundary and must identify all access points (including roadways, power lines, rail spurs, etc.); 2. Locations where fencing will be implemented; 3. Restriction signage spacing (restriction signage may include notices such as "No Trespassing," "Private Property," "Do Not Enter," or "Restricted Area"); 4. Location of remote monitoring devices; 5. Operation and maintenance requirements of remote monitoring software and devices; 6. Contingency plans for downtime for remote monitoring software and devices; and 7. A response plan for when breaches occur. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7007.0800, subp. 4(D), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.1.60	Recordkeeping for Breaches of the Ambient Air Boundary Within three facility operating days of each observed breach, the Permittee shall document each instance that the ambient air boundary was breached by a member of the general public, including documenting the type, location, and duration of each breach. The Permittee shall identify and, within 30 days, implement measures to prevent future breaches, if necessary. A breach to the ambient boundary occurs when a member of the general public accesses property identified by the Permittee as non-ambient air other than by invitation, request or for other facility authorized business purposes. The observation of a breach may be direct or indirect. A direct observation includes witnessing a

Commented [A31]: As stated in Water Gremlin's cover letter on the draft permit, the MDH's health benchmark was improperly extrapolated and derived. EPA's PPRTV for TDCE is the more appropriate health benchmark to use for determining the overall facility emissions limit.

Commented [A32]: Allow 270 days for any additional public preclusion plan construction, if required.

Requirement number	Requirement and citation
	member of the general public on property identified as non-ambient air. Indirect observations rely on evidence of a breach, such as a cut fence, worn paths, motorized vehicle tracks, or other signs of disturbance by a member of the general public on property identified as non-ambient air. The Permittee shall report each breach, including all steps taken or changes made to the General Public Preclusion Plan to prevent additional breaches, in the semiannual Deviations Report required by this permit. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7007.0800, subp. 4(D), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
5.1.61	General Public Preclusion Plan - Fencing: The Permittee shall install and maintain fencing along ambient air boundary as depicted in Appendix G. The Permittee shall inspect the fence line ~~once per quarter~~annually. The Permittee shall maintain records of inspection and required maintenance of fence line. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7007.0800, subp. 4(D), Minn. R. 7007.0800, subp. 5, Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.1.62	General Public Preclusion Plan - Remote Monitoring: The Permittee shall operate and maintain remote monitoring equipment to maintain the effective fence line as depicted in Appendix G. The Permittee shall monitor at a minimum of once per day. Remote monitoring devices include but are not limited to fixed cameras and drone mounted cameras. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7007.0800, subp. 4(D), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.1.63	General Public Preclusion Plan - Control of Access: The Permittee shall control access at any unused road, trail equal to or wider than 50 inches, and all abandoned railroad grades as private property and notice of no access to unauthorized persons. ~~The Permittee shall secure these access points with a locked and/or monitored gate or other physical barrier precluding access by the general public.~~ The permittee may submit an alternative plan for control access to replace these requirements. Upon MPCA approval, the permittee may follow the approved control access plan in lieu of the "General Public Preclusion Plan - Control of Access" requirements in this permit, The alternative plan to control access must be implemented within 180 days after MPCA approval. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7007.0800, subp. 4(D), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.1.64	The permittee shall comply with National Primary and Secondary Ambient Air Quality Standards, 40 CFR pt. 50, and the Minnesota Ambient Air Quality Standards, Minn. R. 7009.0010 to 7009.0090. Compliance shall be demonstrated upon written request by the MPCA. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.1.65	Commercial Disclosure Regarding Facility Emissions Into the Community: The Permittee shall conduct a meeting annually to disclose factual information to the community regarding facility operations, changes made or planned to reduce air emissions, management of hazardous materials and compliance with environmental permits and regulations. The Permittee shall provide the time, date, location, format, and agenda of the meeting to the MPCA 60 days before the meeting. [Minn. R. 7007.0800, subp. 2(B), Minn. Stat. 116.07, subd. 9(2)]
5.1.66	The responsible official that certifies the submittals required to be certified by rule and by this permit must meet the definition at Minn. R. 7007.0100, subp. 21. The Permittee must obtain approval of delegation of authority for the designated representative by the Commissioner as required by Minn. R. 7007.0100, subp. 21(A), (B) or (C). The certification statements must meet the requirements in Minn. R. 7007.0500 subp. 3. [Minn. R. 7007.0100, subp. 21, Minn. R. 7007.0800, subp. 6(A)]
COMG 1	**VOC and 1,2 (trans) Dichloroethylene Limits and VOC Coater, Water-Based Coater, UV Coater, and Solvent Distillation Operation Requirements.**
5.2.1	The Permittee shall limit emissions of Volatile Organic Compounds <= 90.0 tons per year 12-month rolling sum to be calculated each operating day for the previous 12-month period as described later in this permit. All VOC-emitting equipment in COMG 1 is subject to this limit.

Commented [A33]: Permittee has fencing and security procedures.

Commented [A34]: There is no provision under Minnesota law that requires the Permitee to conduct annual meetings, and no such requirement should be included in the permit. This comment applies to all similar requirements in the permit.

Commented [A35]: Limit should be on TFAC level, not COMG 1.

Requirement number	Requirement and citation
	VOC emissions shall be calculated based on the method described elsewhere in this permit. VOC content for each VOC-containing material shall be determined as described under the Material Content requirement in Appendix B. VOC emissions shall be calculated based on all VOC, Water Based and UV Coaters. VOC content for each VOC-containing material shall be determined as described under the Material Content requirement in Appendix B. The Permittee may take into account the VOCs from coating operations that exit the facility as waste as described under the Waste Credit for Calculation of VOC Emissions requirement in COMG 1. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.2.2	The Permittee shall limit emissions of 1,2-(trans-) Dichloroethylene <= 78~~XX~~2.6 tons per year 365-day rolling sum to be calculated each operating day for the previous 365-day period as described later in this permit. All 1,2-(trans-) Dichloroethylene-emitting equipment and operations at the facility is subject to this limit. 1,2-(trans-) Dichloroethylene emissions shall be calculated based on the methods described elsewhere in this permit. 1,2-(trans-) Dichloroethylene content in VOC-containing material shall be determined by assuming the entire VOC content is 1,2-(trans-) Dichloroethylene as described under the Material Content requirement in Appendix B. The 1,2-(trans-) Dichloroethylene emissions released outside the coating rooms must also be included as described elsewhere in this permit. The calculation of 1,2-(trans-) Dichloroethylene emissions may take into account the 1,2-(trans-) Dichloroethylene that exits the facility as waste as described under the Waste Credit requirement in COMG 1, but only if the Permittee separately quantifies the specific 1,2-(trans-) Dichloroethylene content in the waste material as described elsewhere in this permit. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
5.2.3	1,2-(trans-) Dichloroethylene ~~Quarterly~~ Annual Purchase Audit: Each calendar ~~quarter~~year, the Permittee shall audit purchase records and existing inventory of 1,2-(trans-) Dichloroethylene VOC-containing material, 1,2-(trans-) Dichloroethylene VOC-containing material usage records and keep records of each audit. If the estimates of use of 1,2-(trans-) Dichloroethylene VOC-containing material based on the purchase and inventory audit shows amounts of use 20 percent or greater than what was calculated based on daily usage logs described elsewhere in the permit, the Permittee shall review and correct as needed the procedures for the daily record keeping of use of 1,2-(trans-) Dichloroethylene VOC-containing material. The audit and records of corrections shall be made available for inspection upon request. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.2.4	Daily Recordkeeping. On each day of operation, the Permittee shall calculate, record, and maintain a record of the total weight of each VOC-containing material used in coating operations. This shall be based on written usage logs. Written usage logs shall include all data and calculations used to obtain the recorded weight(s) of each VOC-containing material used. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.2.5	Volatile Organic Compounds: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate, record, and maintain a record of the following for the previous operating day: 1) total weight of each VOC coating and solvent used in COMG 1 , in tons; 2) total weight of each VOC-containing material used in COMG 1 , including fresh solvent and solvent recovered on-site from the distiller, in tons; 3) total weight of VOC-containing material recovered on-site from the distiller, in tons; 4) total weight of water-based coating used in COMG 1 , in tons;

Commented [A36]: Revise based on EPA PPRTV toxicity data. See Water Gremlin's comments on the draft permit in the cover letter.

Commented [A37]: The 32.6 TPY derives from the misapplication of the 20 ug/m3 limit and ambient monitoring data using a 365-day rolling average instead of a long-term average. Application of the EPA PPRTV reflects a 40 chronic and 400 sub-chronic health benchmark. This translates to an allowable coating usage limit of more than 100 TPY based on risk thresholds. As described in Water Gremlin's comments on the draft permit in the cover letter, the company proposed a reasonable TDCE limit and phase down as it converts its operations to UV coating systems. This proposal was rejected by the MPCA.

Commented [A38]: If this limit includes non-coating rooms, it should be at TFAC level, not at the COMG 1 level.

Commented [A39]: See above comments. The inventory tracking and mass balance approach conservatively assumes what is used and emitted, therefore separate quantification of TDCE and waste material is not necessary.

Commented [A40]: Excessive audit requirement. Annual audits are sufficient.

Commented [A41]: See above comment. There is a significant delta between max usage and actual usage, and MPCA can review all tracking data.

Commented [A42]: Daily recordkeeping should instead be weekly or monthly. The VOC limit is an annual limit and the t-DCE health-based standards are long-term chronic standards.

Commented [A43]: See above. Daily recordkeeping should instead be weekly or monthly. The VOC limit is an annual limit and the t-DCE health-based standards are long-term chronic standards.

Requirement number	Requirement and citation
	5) total weight of UV coating used in COMG 1 , in tons; 6) total weight of VOC-containing material that leaves the facility as waste according to the Waste Credit requirement if taking credit for compliance with the VOC emission limit, in tons; 7) daily VOC emissions for all equipment in COMG 1 for the previous operating day using the formulas specified elsewhere in this permit; and 8) 365-day rolling sum VOC emissions for all equipment in COMG 1 for the previous 365 day period by summing the daily VOC emissions data for the previous 365 days. [Minn. R. 7007.0800, subps. 4-5]
5.2.6	1,2-(trans-) Dichloroethylene: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) total weight of each 1,2-(trans-) Dichloroethylene coating and solvent used in COMG 1 , in tons; 2) total weight of 1,2-(trans-) Dichloroethylene used in COMG 1, assuming the entire VOC content in the ~~coating and solvent material~~solvent is 1,2-(trans-) Dichloroethylene, in tons. This shall include fresh solvent and solvent recovered on-site from the distiller; 3) total weight of 1,2-(trans-) Dichloroethylene VOC-containing material recovered on-site from the distiller, in tons; 4) total weight of 1,2-(trans-) Dichloroethylene recovered from the distiller following the procedures in Appendix B to determine the 1,2-(trans-) Dichloroethylene content in material recovered on-site from the distiller, in tons; 5) total weight of 1,2-(trans-) Dichloroethylene VOC-containing material that left the facility as waste if taking credit for compliance with the 1,2-(trans-) Dichloroethylene emission limit, in tons; 6) total weight of 1,2-(trans-) Dichloroethylene that left the facility as waste following the procedures in Appendix B to determine the 1,2-(trans-) Dichloroethylene content if taking credit for compliance with the 1,2-(trans-) Dichloroethylene emission limit, in tons; 7) total weight of fugitive 1,2-(trans-) Dichloroethylene emissions based on measured indoor air concentrations in non-coating rooms using the ~~concentrations and procedures in Appendix B~~default uncaptured emission rate in 5.2.10, unless updated as described in Appendix B, in tons; 8) total weight of 1,2-(trans-) Dichloroethylene emissions using the formulas specified in this permit; and 9) 365-day rolling sum of 1,2-(trans-) Dichloroethylene emissions for the previous 365 day period by summing the daily 1,2-(trans-) Dichloroethylene emissions data for the previous 365 days. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) &9(2)]
5.2.7	Volatile Organic Compounds: Volatile Organic Compounds: Monthly Calculations. The Permittee shall calculate VOC emissions using the following equations: VOC (tons/month) = V - W V = (A1 x B1) + (A2 x B2) + (A3 x B3) +.....+ (C1 x D1) + (C2 x D2) + (C3 x D3).....+ (E1 x F1) + (E2 x F2) + (E3 x F3) +..... W = (G1 x H1) + (G2 x H2) + (G3 x H3) +..... Where: V = total weight of VOC used, in tons/month; A# = total weight of VOC-containing material used in COMG 1 based on daily usage logs, in tons/month. The VOC containing material weight must include the initial weight of prepared coating in each coater-specific tank as well as the weight of solvent added to each tank to thin out the coating; B# = weight percent VOC in A# defined in Appendix B, as a fraction. The weight percent for the formulation allowed by this permit is 0.90 lb VOC/lb solvent. The requirements to approve the use of other formulations and emission factors are defined elsewhere in this permit; C# = total weight of UV coating used in COMG 1 based on daily usage logs, in tons/month; D# = VOC emission factor for UV coating, as lb VOC/lb coating. The emission factor for UV coating allowed by this permit 0.0031 lb VOC/lb coating. The requirements to approve the use of other VOC

Commented [A44]: See above. Daily recordkeeping should instead be weekly or monthly. The VOC limit is an annual limit and the t-DCE health-based standards are long-term chronic standards.

Commented [A45]: Strike this language. Fugitive emissions have been evaluated and modeled with a safety factor that eliminates the need for daily recordkeeping or ongoing sampling.

Commented [A46]: This calculation should be based on the value in 5.2.10 unless it is updated as described in Appendix B.

Commented [A47]: Note that this value will begin to be calculated upon permit issuance and will not be back-calculated from previous data.

Commented [A48]: Note that this value will begin to be calculated upon permit issuance and will not be back-calculated from previous data.

Commented [A49]: This equation is inconsistent with the tracking that has been ongoing as part of the Administrative Order. If the Administrative Order is not terminated, Water Gremlin will be subject to conflicting VOC calculations to meet each document's requirement. Water Gremlin reiterates that the Administrative Order should be terminated as its ongoing requirements have been incorporated into the air permit.

Requirement number	Requirement and citation
	emission factors are defined elsewhere in this permit. E# = total weight of each water-based coating solids used in COMG 1 based on daily usage logs, in tons/month; F# = VOC emission factor from water-based coating, as lb VOC/lb coating. The emission factor for water-based coating allowed by this permit 0.00001~~57~~ lb VOC/lb ~~coating~~solids. The requirements to approve the use of other VOC emission factors are defined elsewhere in this permit. W = total weight of VOC shipped in waste, in tons/month; G# = total weight of each VOC-containing waste material shipped based on daily usage logs, in tons/month. If the Permittee chooses to not take credit for waste shipments, this parameter would be zero; and H# = weight percent of VOC in G#, defined in Appendix B and the Waste Credit requirement in COMG 1, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.2.8	1,2-(trans-) Dichloroethylene: Daily Calculations. The Permittee shall calculate 1,2-(trans-) Dichloroethylene emissions using the following equations: 1,2-(trans-) Dichloroethylene (tons/day) = T - X T = (I1 x J1) + (I2 x J2) + (I3 x J3) +.....+ K X = (M1 x N1) + (M2 x N2) + (M3 x N3) +..... Where: T = total weight of 1,2-(trans-) Dichloroethylene used, in tons/day; I# = total weight of 1,2-(trans-) Dichloroethylene VOC-containing material used in COMG 1 based on daily usage logs, in tons/day. The 1,2-(trans-) Dichloroethylene VOC-containing material weight must include the initial weight of prepared coating in each coater-specific tank as well as the weight of 1,2-(trans-) Dichloroethylene VOC solvent added to each tank to thin out the coating; J# = weight percent of 1,2-(trans-) Dichloroethylene in I# defined in Appendix B, as a fraction. The weight percent for the formulation allowed by this permit is 0.90 lb 1,2-(trans-) Dichloroethylene /lb solvent. The requirements to approve the use of other formulations and emission factors are defined elsewhere in this permit; X = total weight of 1,2-(trans-) Dichloroethylene shipped in waste, in tons/day; M# = total weight of 1,2-(trans-) Dichloroethylene VOC-containing material shipped in waste based on daily usage logs, in tons/day. If the Permittee chooses to not take credit for waste shipments, this parameter would be zero; N# = weight percent of 1,2-(trans-) Dichloroethylene in M#, as a fraction, as determined in Appendix B and by the Waste Credit requirements elsewhere in this permit; K = default daily uncaptured 1,2-(trans-) Dichloroethylene emissions based on measured indoor air concentrations of non-coating rooms, in tons/day, as described elsewhere in this permit; and. [Minn. R. 7007.0800, subps. 4-5]
5.2.9	~~Daily Reporting: The Permittee shall continue to comply with the requirements of all effective enforcement documents until those documents are terminated by MPCA. As of issuance of Permit No. 12300341-101, these enforcement documents include the Stipulation Agreement executed March 1, 2019, and the Administrative Order signed January 17, 2020. These documents are included for reference as Attachments 5 and 6 to the TSD of this permit, respectively. [Minn. R. 7007.0800, subp. 2(A) & (B)]~~
5.2.10	~~1,2-(trans-) Dichloroethylene: Default Uncaptured Emission Rate.~~ ~~The Default Uncaptured Emission Rate to be used based on measured indoor air concentrations in non-coating rooms for the purposes of calculating total daily 1,2-(trans-) Dichloroethylene emissions are defined as follows:~~ ~~Default 1,2-(trans-) Dichloroethylene Uncaptured Emission Rate = 0.00324 tons/day~~

Commented [A50]: The emission factor for VOCs presented here is incorrect. The VOCs associated with the water-based coating have a VOC content of 0.001%, or 0.00001 lb VOC/lb water-based solids. Water Gremlin tracks the amount of solids in their formulation, so the corrected equation is: VOC from water-based coating = total weight of solids in water-based coating * 0.00001 lb VOC/lb solids.

Commented [A51]: See above. Daily recordkeeping should instead be weekly or monthly. The VOC limit is an annual limit and the t-DCE health-based standards are long-term chronic standards.

Commented [A52]: Agreement and Order should be terminated upon permit issuance; requirements are already included in the permit.

Requirement number	Requirement and citation
	~~The Permittee shall add this value (K) to the total daily 1,2 (trans) Dichloroethylene emissions following the requirements of this permit. The Permittee may change the default uncaptured emission rate following the requirements specified in this permit and the procedures in Appendix B. [Minn. R. 7007.0800, subps. 4-5]~~
5.2.11	~~1,2 (trans) Dichloroethylene: Changes to Default Uncaptured Emission Rates.~~ ~~The Permittee may change the default uncaptured emission rate based on approved indoor testing of non-coating rooms at the facility identified in Appendix B. The revised emission rates shall be calculated as follows:~~ ~~DFE = (Y1 x Z1) + (Y2 x Z2) + (Y3 x Z3) +.....~~ ~~where:~~ ~~DFE = Default Uncaptured Emission rate of 1,2 (trans) Dichloroethylene, in tons/day;~~ ~~Y# = concentration of 1,2 (trans) Dichloroethylene measured in each non-coating room at the facility described in Appendix B, in tons/actual cubic foot; and~~ ~~Z# = total actual flow rate of all vents associated with each non-coating room at the facility, in actual cubic feet/day. [Minn. R. 7007.0800, subps. 4-5]~~
5.2.12	~~1,2 (trans) Dichloroethylene: Reconciliation of Predicted Stack Concentration and CEMS (EQUI 176) Readings.~~ ~~By 4:30pm each coating operating day, the Permittee shall calculate and record the predicted stack concentration of 1,2 (trans) Dichloroethylene versus 1,2 (trans) Dichloroethylene usage the following equation:~~ ~~y = 0.1295x + 49.163~~ ~~Where:~~ ~~y = predicted 1,2 (trans) Dichloroethylene stack concentration, in ppmv wet of Total Hydrocarbon Concentration as 1,2 (trans) Dichloroethylene;~~ ~~x = 1,2 (trans) Dichloroethylene usage, in pounds per day, from daily t-DCE containing VOC coating and solvent usage records. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. Stat. 116.07, subd. 9(2)]~~
5.2.13	~~Reconciliation of Predicted Stack Concentration and CEMS Readings Audit: If the daily CEMS (EQUI 176) reading exceeds the predicted 1,2 (trans) Dichloroethylene stack concentration for that day, in ppmv wet, the Permittee shall immediately audit the 1,2 (trans) Dichloroethylene containing material usage and inventory records to determine the cause of this discrepancy and shall report this as a deviation. The Permittee shall implement needed corrections based on this review. The Permittee shall keep records of each calculation, whether a deviation was observed, and whether a correction was made and how the correction was made. [Minn. R. 7007.0800, subps. 4-6, Minn. Stat. 116.07, subd. 9(2)]~~
5.2.14	Material Content. VOC and Solids (PM, PM<10 microns, and PM<2.5 microns) contents in coating materials shall be determined by the Safety Data Sheet (SDS) or the Material Safety Data Sheet (MSDS) provided by the supplier for each material used. If a material content range is given on the SDS or the MSDS, the highest number in the range shall be used in all compliance calculations. If information is provided in the Regulatory Section of the SDS, the highest number in the range of that section may be used. Other alternative methods approved by the MPCA may be used to determine the VOC and solids contents. If the SDS, MSDS, or information from the vendor is not available, ~~T~~the Commissioner reserves the right to require the Permittee to determine the VOC and solids contents of any coating material, according to EPA or ASTM reference methods. ~~If an EPA or ASTM reference method is used for material content determination, the data obtained shall supersede the SDS or the MSDS.~~ [Minn. R. 7007.0800, subps. 4-5]
5.2.15	Maximum Contents of Materials and Process Rate: The Permittee assumed certain worst-case contents of materials and process rates when determining the short-term potential to emit of units in COMG 1. These assumptions are listed in Appendix B and Appendix C of this permit. Increasing the

Commented [A53]: This requirement is unnecessary.

Commented [A54]: This equation was established based on faulty correlation of CEMS results with VOC tracking data. The CEMS analyzes and reports total hydrocarbons while the VOC tracking data includes t-DCE but also natural gas and mitigation system assumed emissions, not actual emissions. Additionally, the CEMS results are reported based on the calibration times and are often approximately 10 am to 10 am. The VOC tracking sheet reports 6 am to 6 am. The CEMS should be discontinued and tracking against health benchmarks be based on t-DCE usage and inventory data.

Commented [A55]: The stack CEMS does not measure t-DCE concentration. It measures total hydrocarbons and reports the results as "THC as t-DCE." As such, results have been improperly correlated by MPCA and the agency has years of data to verify these differences. The mass balance is sufficient as demonstrated by the Company's tracking over the last three years.

Commented [A56]: Delete the CEMS requirement. CEMS for STRU73 is not necessary nor useful. See comment letter for further information.

Commented [A57]: Not all VOC from STRU 3 is t-DCE.

Requirement number	Requirement and citation
	process rate or changing to a material that has a higher content of any of the given pollutants, or an addition of a pollutant not listed in Appendix B or Appendix C, is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150. [Minn. R. 7005.0100, subp. 35a]
5.2.16	Waste Credit for Calculation of VOC Emissions: If the Permittee elects to obtain credit for VOC shipped in waste materials, the Permittee shall either use item 1 or 2 to determine the VOC content for each credited shipment. 1) The Permittee shall analyze a representative composite sample of ~~each~~ a representative waste shipment to determine the weight content of VOC, excluding water following the procedures in Appendix B. 2) The Permittee may use supplier data for raw materials to determine the VOC contents of each waste shipment, using the same content data used to determine the content of raw materials. If the waste contains several materials, the content of mixed waste shall be assumed to be the lowest VOC content of any of the materials. [Minn. R. 7007.0800, subps. 4-5]
5.2.17	Waste Credit for Calculation of 1,2-(trans-) Dichloroethylene Emissions: If the Permittee elects to obtain credit for 1,2-(trans-) Dichloroethylene shipped in waste materials, the Permittee shall determine the specific content of 1,2-(trans-) Dichloroethylene in waste material, in weight percent, following the analysis procedure and frequency requirements in Appendix B. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.2.18	Conversion of VOC Spray Coater(s) to VOC Dip/Drip Coater(s). The Permittee is authorized to modify existing spray VOC coaters to dip/drip application methods. A permit amendment may be needed if there is a significant~~n~~ increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the converted coater(s) shall comply with all requirements for VOC coaters described under COMG 1 and COMG 5, and be removed from COMG 4 and COMG 14 for compliance demonstration purposes. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
5.2.19	Conversion of VOC Spray Coater(s) to Water-Based Spray Coater(s). The Permittee is authorized to modify existing spray VOC coaters to use Tacolyn 3570 water-based coating applied by spray methods. A permit amendment may be needed if there is a significant~~n~~ increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the converted coater(s) shall comply with all requirements for water-based coaters described under COMG 1, COMG 5, and COMG 8, and COMG 14, and be removed from COMG 4 for compliance demonstration purposes. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
5.2.20	Conversion of VOC Spray Coater(s) to Water-Based Dip/Drip Coater(s). The Permittee is authorized to modify existing spray VOC coaters to use Tacolyn 3570 water-based coatings applied by dip/drip methods. A permit amendment may be needed if there is a ~~n~~significant increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a

Requirement number	Requirement and citation
	permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the converted coater(s) shall comply with all requirements for water-based coaters described under COMG 1 and be removed from COMG 4, COMG 5, and COMG 14 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
5.2.21	Conversion of VOC Spray Coater(s) to Ultraviolet (UV) Spray Coater(s). The Permittee is authorized to modify existing VOC spray coaters to use the WGCS 300 UV spray coating method. A permit amendment may be needed if there is a significant~~n~~ increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the converted coater(s) shall comply with all requirements for UV coaters described under COMG 1, COMG 2, COMG 5, and COMG 14, and shall be removed from COMG 4 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
5.2.22	Conversion of VOC Dip/Drip Coater(s) to Water-Based Spray Coater(s). The Permittee is authorized to modify existing VOC dip/drip coaters to use Tacolyn 3570 water-based coatings applied by spray methods. A permit amendment may be needed if there is a significant~~n~~ increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the converted coater(s) shall comply with all requirements for water-based coaters described under COMG 1, COMG 5, COMG 8, and COMG 14 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
5.2.23	Conversion of VOC Dip/Drip Coater(s) to Water-Based Dip/Drip Coater(s). The Permittee is authorized to modify existing VOC dip/drip coaters to use Tacolyn 3570 water-based coatings applied by dip/drip methods. A permit amendment may be needed if there is a significant~~n~~ increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the converted coater(s) shall comply with all requirements for water-based coaters described under COMG 1 and be removed from COMG 5 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
5.2.24	Conversion of VOC Dip/Drip Coater(s) to Ultraviolet (UV) Spray Coater(s). The Permittee is authorized to modify existing VOC dip/drip coaters to use the WGCS 300 UV spray coating method. A permit amendment may be needed if there is a significant~~n~~ increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the

Requirement number	Requirement and citation
	Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the converted coater(s) shall comply with all requirements for UV coaters described under COMG 1, COMG 2, COMG 5, and COMG 14 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
5.2.25	The Permittee is prohibited from making any of the following changes without a major permit amendment to extend enforcement of the existing emission limit caps and emission calculation methods. The Permittee may submit to MPCA an applicability determination to confirm the need for a major amendment when planning any of the modifications listed below: 1) Converting any type of existing VOC coater to any type of VOC coater in a manner that increases potential emissions of any pollutant; 2) Replacing any type of existing VOC coater with any type of new VOC coater that results in increased emissions; 3) Adding any type of new VOC coater; 4) Converting any type of strictly water-based coater to any type of strictly VOC coater. This does not apply to existing hybrid coaters identified in Appendix B as able to apply water-based and/or VOC coatings; 5) Replacing any type of strictly water-based coater with any type of strictly VOC coater. This does not apply to existing hybrid coaters identified in Appendix B as able to apply water-based and/or VOC coatings; 6) Converting any type of existing UV coater to any type of VOC coater; or 7) Replacing any type of existing UV coater with any type of VOC coater. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
5.2.26	Conversion of Water-Based Spray Coater(s) to Water-Based Dip/Drip Coater(s). The Permittee is authorized to modify existing water-based spray coaters to use Tacolyn 3570 water-based coatings applied by dip/drip methods. A permit amendment may be needed if there is a significant~~n~~ increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the converted coater(s) shall comply with all requirements for water-based coaters described under COMG 1 and be removed from COMG 8 and COMG 14 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
5.2.27	Conversion of Water-Based Dip/Drip Coaters to Water-Based Spray Coaters. The Permittee is authorized to modify existing water-based dip/drip coaters to use Tacolyn 3570 water-based coatings applied by spray methods. A permit amendment may be needed if there is a significnat~~n~~ increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the converted coater(s) shall comply with all requirements for water-based coaters described under COMG 1, COMG 5, COMG 8, and COMG 14 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]

Requirement number	Requirement and citation
5.2.28	Conversion of Water-Based Spray Coater(s) to Ultraviolet (UV) Spray Coater(s). The Permittee is authorized to modify water-based spray coaters to use the WGCS 300 UV spray coating method. A permit amendment may be needed if there is a significant~~n~~ increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the converted coater(s) shall comply with all requirements for UV coaters described under COMG 1, COMG 2, COMG 5, and COMG 14, and be removed from COMG 8 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
5.2.29	Conversion of Water-Based Dip/Drip Coater(s) to Ultraviolet (UV) Spray Coater(s). The Permittee is authorized to modify water-based dip/drip coaters to use the WGCS 300 UV spray coating method. A permit amendment may be needed if there is a significant~~n~~ increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the converted coater(s) shall comply with all requirements for UV coaters described under COMG 1, COMG 2, COMG 5, and COMG 14 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
5.2.30	Replacement of Existing Water-Based Spray Coater(s) and Addition of New Water-Based Spray Coater(s). The Permittee is authorized to replace existing water-based spray coaters with new water-based spray coaters, and add additional new water-based spray coaters. A permit amendment may be needed if there is a significant~~n~~ increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the new coater(s) shall comply with all requirements for water-based spray coaters described under COMG 1, COMG 5, COMG 8, and COMG 14 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
5.2.31	Replacement of Existing Water-Based Dip/Drip Coater(s). Change of Location of Water-Based Dip/Drip Coater(s) Outside the Coating Rooms Exhausting Through STRU 73, and Addition of New Water-Based Dip/Drip Coater(s). The Permittee is authorized to replace existing water-based dip/drip coaters with new water-based dip/drip coaters, or change the location of existing water-based dip/drip coaters to a location outside the coating rooms exhausting through STRU 73, or install new water-based dip/drip coaters. A permit amendment may be needed if there is a significant~~n~~ increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the new coater(s) shall comply with all requirements for water-based coaters described under COMG 1 for compliance demonstration

Requirement number	Requirement and citation
	purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
5.2.32	Conversion of Ultraviolet (UV) Spray Coater(s) to Water-Based Spray Coater(s). The Permittee is authorized to modify existing UV coaters to use water-based coaters with spray application methods. A permit amendment may be needed if there is a significant~~n~~ increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the converted coater(s) shall comply with all requirements for water-based coaters described under COMG 1, COMG 5, COMG 8, and COMG 14, and be removed from COMG 2 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
5.2.33	Conversion of Ultraviolet (UV) Spray Coater(s) to Water-Based Dip/Drip Coater(s). The Permittee is authorized to modify existing UV coaters to use water-based coaters with dip/drip application methods. A permit amendment may be needed if there is a significant~~n~~ increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the converted coater(s) shall comply with all requirements for water-based coaters described under COMG 1, and be removed from COMG 2, COMG 5, and COMG 14 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
5.2.34	Replacement of Existing UV Spray Coater(s) and Addition of New UV Spray Coater(s). The Permittee is authorized to replace existing UV coaters with new UV coaters, and add additional new UV coaters. A permit amendment may be needed if there is a significant~~n~~ increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the new coater(s) shall comply with all requirements for UV coaters described under COMG 1, COMG 2, COMG 5, and COMG 14 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
5.2.35	Replacement of Existing VOC Dip/Drip Coater(s). The Permittee is authorized to replace existing VOC dip/drip coater with new VOC dip/drip coater of equal or lower design capacity so that there is no increase of potential emissions of t-DCE. A permit amendment may be needed if there is a significant~~n~~ increase of other regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the new coater(s) shall comply with all requirements for VOC Dip/Drip coaters described under COMG 1 and

Requirement number	Requirement and citation
	COMG 5 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.385, subd. 3]
5.2.36	Replacement of Existing VOC spray Coater(s). The Permittee is authorized to replace existing VOC spray coater with new VOC dip/drip coater of equal or lower design capacity so that there is no increase of potential emissions of t-DCE or PM10 or PM2.5. A permit amendment may be needed if there is a significant ~~n~~ increase of other regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the new coater(s) shall comply with all requirements for VOC spray coaters described under COMG 1, COMG 5, COMG 4 and COMG 14 for compliance demonstration purposes. [Minn. R. 7007.0800, subp. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
5.2.37	VOC Solvent Formulation: The Permittee shall limit VOC solvent use to the formulation described in Appendix B of this permit or an equivalent formulation. For authorization to use alternative VOC solvents with formulations that increase emissions of chemicals identified under the Toxicological or Ecological Information section of the Safety Data Sheet, or that add new chemicals not identified in the Toxicological or Ecological Information section of the Safety Data Sheet~~, or~~ that increase the VOC content above 90 percent (by weight), the Permittee shall submit a major amendment with a revised Air Emissions Risk Analysis (AERA) following procedures as required under Minn. R. 7007.1500. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
5.2.38	Water-Based Coating Formulation: The Permittee shall limit use of water-based coating to the formulation described in Appendix B of this permit or an equivalent formulation. For authorization to use other water-based coatings with formulations that increase emissions of any chemical identified under the Toxicological or Ecological Information section of the Safety Data Sheet, or that add new chemicals not identified in the Toxicological or Ecological Information section of the Safety Data Sheet, the Permittee shall submit a major amendment following procedures as required under Minn. R. 7007.1500. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
5.2.39	Ultraviolet (UV) Coating Formulation: The Permittee shall limit use of UV coating to the formulation described in Appendix B of this permit or an equivalent formulation. For authorization to use other UV coatings with formulations that increase emissions of any chemical identified under the Toxicological or Ecological Information section of the Safety Data Sheet, or that add new chemicals not identified in the Toxicological or Ecological Information section of the Safety Data Sheet, the Permittee shall submit a major amendment following procedures as required under Minn. R. 7007.1500. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
5.2.40	The Permittee is prohibited from using any coating that contains any hazardous air pollutant (HAP), including the target HAPs as defined under 40 CFR Section 63.11180. The Permittee shall keep records that describe the HAP content in each coating used based on manufacturing data or coating analysis as prescribed in Appendix B. [Minn. R. 7007.0800, subp. 2(A)]

5.2.41	VOC Coater Installation Requirements: The Permittee shall install and maintain each VOC coater to meet the following requirements: 1) Non-table top coaters shall be fitted with a stainless steel catch pan designed to catch and minimize spills of coating material and any other contaminants associated with the coating process; 2) Table-top coaters shall be placed in a catch pan or other secondary containment vessel designed to catch and minimize spills of coating material and any other contaminants associated with the coating

Commented [A58]: Catch pans meant to prevent intrusion to the sub-slab, which is only applicable for VOC coating, not spray coating. This requirement should not be in this COMG and should be specified for VOC COMG only.

Requirement number	Requirement and citation
	process; and 3) Non-table top coaters shall be enclosed on all sides, including the top. Concrete walls may not be utilized as part of the coater enclosure. [Minn. R. 7007.0800, subp. 2(A) & (B)]
5.2.42	Battery Terminal Post Coaters: Daily Maintenance. At the end of each shift on each operating day, the Permittee shall inspect each VOC, water-based, and UV coater in COMG 1 for coating spills and other materials in coater catch pans, secondary containment, and/or the floor. The Permittee shall clean and dispose of any coating material that is determined by the permittee to be a hazardous waste at the time of disposition, or other hazardous ~~waste~~material removed from~~, or other hazardous substance discovered in~~ coater catch pans, secondary containment, or the floor in accordance with applicable state and local hazardous waste, solid waste, recycling and reuse regulations, and the material handling recommendations from the manufacturer of the coatings and solvents used. The Permittee shall keep records of coaters cleaned and corrective actions taken to prevent spills. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. ch. 7045]
5.2.43	Coating Transfer: The Permittee shall perform all transfers of VOC solvent and VOC-containing materials, including mixing of coating formulations, inside a coating room meeting the requirements of COMG 5. Transfer of VOC-containing materials via open containers outside the coating room including, but not limited to buckets, beakers, etc., is prohibited. [Minn. R. 7007.0800, subp. 2(A) & (B)]
5.2.44	VOC-Containing Material Storage: The Permittee shall keep lids securely in place on all VOC-containing material storage and transfer containers while not in active use. [Minn. R. 7007.0800, subp. 2(A) & (B)]
COMG 2	**PM10 and PM2.5: Limits and Compliance Requirements for Ultraviolet (UV) Battery Terminal Post Coaters**
5.3.1	The Permittee shall install, operate and maintain each ultraviolet (UV) battery terminal post coater subject to COMG 2 requirements inside a coating room meeting the requirements of COMG 5. This requirement does not apply to EQUI 82, EQUI 117, or EQUI 240. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.3.2	The Permittee shall vent emissions from each ultraviolet (UV) battery terminal post coater subject to COMG 2 requirements to control equipment meeting the requirements of COMG 14 whenever each ultraviolet (UV) battery terminal post coater operates. This requirement does not apply to EQUI 82, EQUI 117, or EQUI 240. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.3.3	Each ultraviolet (UV) battery terminal post coater subject to COMG 2 requirements is subject to the requirements in COMG 1 except as noted within COMG 1. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.3.4	Each ultraviolet (UV) battery terminal post coater operated at the facility is subject to the requirements in COMG 5. This requirement does not apply to EQUI 117 and EQUI 240. [Minn. R. 7007.0800, subp. 2(A) & 2(B), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
5.3.5	The Permittee is prohibited from using any coating that contains any hazardous air pollutant (HAP), including the target HAPs as defined under 40 CFR Section 63.11180. [Minn. R. 7007.0800, subp. 2(A)]
5.3.6	Daily Recordkeeping. On each day of operation, the Permittee shall calculate, record, and maintain a record of the total quantity of each coating and other solids-containing material, including the solids content of each coating (as a mass fraction), used by each coater in COMG 2. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.3.7	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate, record, and maintain a record of the following for the previous operating day using the daily

Commented [A59]: Catch pans meant to prevent intrusion to the sub-slab, which is only applicable for VOC coating, not spray coating. This requirement should not be in this COMG and should be specified for VOC COMG only.

Commented [A60]: UV coating is not a hazardous waste. This requirement should be specific to VOC coaters, if applicable.

Commented [A61]: This is too general a statement. There are requirements in COMG 5 that do not apply to UV coaters, such as catch pans and the VOC and water-based solvent formulations. Remove this requirement from COMG 2.

Commented [A62]: Redundant to 5.2.40, especially given above requirement. Also, UV formulation does not have HAPs.

Requirement number	Requirement and citation
	usage records: 1) Total weight of UV coating used by each unit in COMG 2, in pounds/day; and 2) Daily average hourly emissions of PM10 and PM2.5 from all coaters in COMG 2 as determined elsewhere in this permit, in pounds/hour. This record shall also include solids contents of each material as determined by the Material Content requirement of this permit. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.3.8	PM < 10 micron: Daily Calculations. The Permittee shall calculate PM10 emissions from COMG 2 using the following equations: PM10UV = [TPM10UV (uncontrolled) + TPM10UV (controlled)] / 24 TPM10UV (uncontrolled) = [(KUV1 x LUV1) + (KUV2 x LUV2) + (KUV3 x LUV3)] TPM10UV (controlled) = [(KUV1 x LUV1) + (KUV2 x LUV2) + (KUV3 x LUV3)] x (1-CE1) where: PM10UV = daily average PM10 emissions from COMG 2, in pounds/hour; TPM10UV = total daily PM10 emissions from each EQUI in COMG 2, in pounds/day; KUV# = total weight of coating used in COMG 2 based on daily usage logs, in pounds/day; and LUV# = uncontrolled PM10 emission factor, in pounds PM10 per pound of coating, listed in Appendix B, as a fraction. Other uncontrolled emission factors allowed by this permit shall be based on the most recent MPCA-approved stack test results performed according to approved replicable methodology (ARM) requirements; and CE1 = minimum PM10 control efficiency required by COMG 14 for the coaters required to be controlled, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.3.9	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate PM2.5 emissions from COMG 2 using the following equations: PM2.5UV = TPM2.5UV (uncontrolled) + TPM2.5UV (controlled)] / 24 TPM2.5UV (uncontrolled) = [(KUV1 x PUV1) + (KUV2 x PUV2) + (KUV3 x PUV3)] TPM2.5UV (controlled) = [(KUV1 x PUV1) + (KUV2 x PUV2) + (KUV3 x PUV3)] x (1-CE2) where: PM2.5UV = daily average PM2.5 emissions from COMG 2, in pounds/hour; TPM2.5UV = total daily PM2.5 emissions from each EQUI in COMG 2, in pounds/day; KUV# = total weight of coating used in COMG 2 based on daily usage logs, in pounds/day; and PUV# = uncontrolled PM2.5 emission factor, in pounds PM2.5 per pound of coating, listed in Appendix B, as a fraction. Other uncontrolled emission factors allowed by this permit shall be based on the most recent MPCA-approved stack test results performed according to approved replicable methodology (ARM) requirements; and CE2 = minimum PM2.5 control efficiency required by COMG 14 for the coaters required to be controlled, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.3.10	Maximum Contents of Materials and Process Rate: The Permittee assumed certain worst-case contents of materials and process rates when determining the short-term potential to emit of units in COMG 2. These assumptions are listed in Appendix B of this permit. Increasing the process rate or changing to a material that has a higher content of any of the given pollutants, or an addition of a pollutant not listed in Appendix B, is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150. [Minn. R. 7005.0100, subp. 35a]

Requirement number	Requirement and citation
5.3.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of coating in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of coating, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.3.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.3.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.3.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of coating in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of coating, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.3.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.3.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
COMG 4	**PM10 and PM2.5: Limits and Compliance Requirements for VOC Spray Battery Terminal Post Coaters**

Commented [A63]: This applies to all instances where only Method 201A is identified. As discussed in the MPCA-WG-Stantec meeting on March 3, 2022, this is an important change to allow Water Gremlin the flexibility to conduct coater performance tests at the coater level instead of forcing testing to occur on STRU 73 due to insufficient duct sizes to allow for Method 201A.

Commented [A64]: The permit has conditions that test plans need to be approved. There is no need for a major amendment to essentially approve a test plan if the protocol in 5.3.8 (or related) is not ideal for an emission factor test. This comment applies to every instance of this requirement for PM10 or PM2.5.

Commented [A65]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A66]: Combine COMG 4 and COMG 8 and delete repetitive requirements. Requirements can be made on individual EQUI level instead.

Requirement number	Requirement and citation
5.4.1	The Permittee shall install, operate and maintain each VOC spray battery terminal post coater subject to COMG 4 requirements inside a coating room meeting the requirements of COMG 5. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.4.2	The Permittee shall vent emissions from each VOC spray battery terminal post coater subject to COMG 4 requirements to control equipment meeting the requirements of COMG 14 whenever each VOC spray battery terminal post coater operates. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.4.3	Each VOC spray battery terminal post coater subject to COMG 4 requirements is subject to the requirements in COMG 1. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.4.4	The Permittee is prohibited from using any coating that contains any hazardous air pollutant (HAP), including the target HAPs as defined under 40 CFR Section 63.11180. [Minn. R. 7007.0800, subp. 2(A)]
5.4.5	Daily Recordkeeping. On each day of operation, the Permittee shall calculate, record, and maintain a record of the total quantity of each coating and other solids-containing material, including the solids content of each coating (as a mass fraction), used by each coater in COMG 4. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.4.6	Particulate Matter: Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate, record, and maintain a record of the following for the previous operating day using the daily usage records: 1) Total weight of VOC coating used by each unit in COMG 4, in pounds/day; and 2) Daily average hourly emissions of PM10 and PM2.5 from all coaters in COMG 4 as determined elsewhere in this permit, in pounds/hour. This record shall also include solids contents of each material as determined by the Material Content requirement of this permit. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.4.7	PM < 10 micron: Daily Calculations. The Permittee shall calculate PM10 emissions from COMG 4 using the following equations: PM10VOC = TPM10VOC/24 TPM10VOC = [(IVOC1 x JVOC1) + (IVOC2 x JVOC2) + (IVOC3 x JVOC3)] x (1-TE) x (1-CE1) where: PM10VOC = daily average PM10 emissions from COMG 4, in pounds/hour; TPM10VOC = total daily PM10 emissions from each EQUI in COMG 4, in pounds/day; IVOC# = total weight of coating used in COMG 4 based on daily usage logs, in pounds/day; and JVOC# = solids content of coating used in IVOC#, in weight percent; TE = minimum transfer efficiency allowed by the permit as of permit issuance (65 percent). Other transfer efficiencies allowed by this permit shall be based on the most recent MPCA-approved stack test results according to approved replicable methodology (ARM) requirements; and CE1 = minimum PM10 control efficiency required by COMG 14, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.4.8	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate PM2.5 emissions from COMG 4 using the following equations: PM2.5VOC = TPM2.5VOC/24 TPM2.5VOC = [(IVOC1 x JVOC1) + (IVOC2 x JVOC2) + (IVOC3 x JVOC3)] x (1-TE) x (1-CE2) where:

Commented [A67]: Redundant to COMG 5 requirement. All coaters in COMG 4 are also in COMG 5.

Commented [A68]: Redundant to COMG 1 requirement. All coaters in COMG 4 are also in COMG 1.

Commented [A69]: Redundant.

Requirement number	Requirement and citation
	PM2.5VOC = daily average PM10 emissions from COMG 4, in pounds/hour; TPM2.5VOC = total daily PM2.5 emissions from each EQUI in COMG 4, in pounds/day; IVOC# = total weight of coating used in COMG 4 based on daily usage logs, in pounds/day; and JVOC# = solids content of coating used in IVOC#, in weight percent; TE = minimum transfer efficiency allowed by the permit as of permit issuance (65 percent). Other transfer efficiencies allowed by this permit shall be based on the most recent MPCA-approved stack test results according to approved replicable methodology (ARM) requirements; and CE2 = minimum PM2.5 control efficiency required by COMG 14, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.4.9	Material Content. Solids (PM, PM<10 microns, and PM<2.5 microns) contents in coatings and other materials used in COMG 4 shall be determined by the Safety Data Sheet (SDS) or the Material Safety Data Sheet (MSDS) provided by the supplier for each material used. If a material content range is given on the SDS or the MSDS, the highest number in the range shall be used in all compliance calculations. If there is information provided in the Regulatory Section of the SDS, the highest number in the range of that section may be used. Other alternative methods approved by the MPCA may be used to determine the solids content. The Commissioner reserves the right to require the Permittee to determine the solids content of any material, according to EPA or ASTM reference methods. If an EPA or ASTM reference method is used for material content determination, the data obtained shall supersede the SDS or the MSDS. [Minn. R. 7007.0800, subp. 4-5]
5.4.10	Maximum Contents of Materials and Process Rate: The Permittee assumed certain worst-case contents of materials and process rates when determining the short-term potential to emit of units in COMG 4. These assumptions are listed in Appendix B of this permit. Increasing the process rate or changing to a material that has a higher content of any of the given pollutants, or an addition of a pollutant not listed in Appendix B, is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150. [Minn. R. 7005.0100, subp. 35a]
5.4.11	Transfer efficiency for PM < 10 micron: Protocol for Re-Setting the Transfer efficiency Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission rates in pound PM10 per hour and transfer efficiency in pound PM10 per pound of solids (as applied) as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per hour and pound of coating solids as applied in the performance test report required by Minn. R. 7017.2035, subp. 1. The transfer efficiency for PM < 10 micron used for calculating emissions shall be re-set to the 3-hour average transfer efficiency in pound PM10 per pound of coating solids as applied, measured during the most recent MPCA-approved emission factor performance test. The new transfer efficiency for PM < 10 micron: used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subp. 2(A) & (B) , Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.4.12	Transfer efficiency for PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Transfer efficiency for PM < 10 micron Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
5.4.13	Transfer efficiency for PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If

Commented [A70]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Requirement number	Requirement and citation
	the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.4.14	Transfer efficiency for PM < 2.5 micron: Protocol for Re-Setting the Transfer efficiency Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission rates in pound PM2.5 per hour and transfer efficiency in pound PM2.5 per pound of solids (as applied) as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per hour and pound of coating solids as applied in the performance test report required by Minn. R. 7017.2035, subp. 1. The transfer efficiency for PM < 2.5 micron used for calculating emissions shall be re-set to the 3-hour average transfer efficiency in pound PM2.5 per pound of coating solids as applied, measured during the most recent MPCA-approved emission factor performance test. The new transfer efficiency for PM < 2.5 micron: used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.4.15	Transfer efficiency for PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Transfer efficiency for PM < 2.5 micron Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
5.4.16	Transfer efficiency for PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
COMG 5	**Permanent Total Enclosure Requirements: Coating Rooms**
5.5.1	The Permittee shall limit Coating Room Pressure Drop <= -0.007 inches of water, as established in Method 204 of appendix M to 40 CFR part 51. Pressure drop across the established enclosure shall be monitored at all times as described elsewhere in this permit. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.5.2	The Permittee shall vent emissions from each EQUI subject to COMG 5 requirements to a stack/vent meeting the requirements of STRU 73 whenever each EQUI in COMG 5 operates. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.5.3	The Permittee shall operate and maintain each individual coating room the North Building as permanent total enclosures that meet the criteria of Method 204 of appendix M, 40 CFR pt. 51. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
5.5.4	Coating Room Pressure Drop Continuous Monitoring Devices: The Permittee shall install, operate, and maintain a pressure drop monitoring system (pressure drop gauge EQUI 169, EQUI 170 and EQUI 171 and building management system EQUI 168) for each enclosure meeting the following requirements and maintain records of compliance with these requirements: (1) Complete a minimum of one cycle of operation for each successive 15-minute period having a minimum of four equally spaced successive cycles of CPMS operation in one hour; (2) Determine the average of all recorded readings for each successive 3-hour period of the emission capture system and add-on control device operation; (3) Record the results of each inspection, calibration, and validation check of the pressure drop gauge;

Commented [A71]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A72]: The facility is not subject to 40 CFR 63 subp. MMMM and should not be required to meet the requirements of that NESHAP. Documentation provided for maintaining any negative pressure is sufficient.

Commented [A73]: The facility is not subject to 40 CFR 63 subp. MMMM and should not be required to meet the requirements of that NESHAP.

Requirement number	Requirement and citation
	(4) Maintain the pressure drop gauge at all times and have available necessary parts for routine repairs of the monitoring equipment; (5) Operate the pressure drop gauge and collect pressure drop data at all times that a coating operation is operating, except during monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, if applicable, calibration checks and required zero and span adjustments); (6) Do not use data recorded during monitoring malfunctions, associated repairs, out-of-control periods, or required quality assurance or control activities when calculating data averages. Use all the data collected during all other periods in calculating the data averages for determining compliance with the emission capture system and add-on control device operating limits; (7) Locate the pressure drop gauge(s) in or as close to a position that provides a representative measurement of the pressure drop across each monitored enclosure (each coating room); (8) Use a pressure drop gauge with an accuracy of at least five percent of the minimum pressure drop to be maintained. (9) Perform an initial calibration of the pressure drop gauge according to the manufacturer''s requirements; (10) Conduct a validation check before initial operation or upon relocation or replacement of a pressure drop gauge. Validation checks include comparison of pressure drop gauge values to calibrated pressure measurement devices or to pressure simulation using calibrated pressure sources; (11) Conduct accuracy audits every quarter and after every deviation. Accuracy audits include comparison of pressure drop gauge values to calibrated pressure measurement devices or to pressure simulation using calibrated pressure sources; (12) Perform monthly leak checks on pressure connections. A pressure of at least 1.0 inches of water column to the connection must yield a stable sensor result for at least 15 seconds; and (13) Perform a visual inspection of the pressure drop gauge at least monthly if there is no redundant pressure drop gauge. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
5.5.5	Coating Room Pressure Alarm: The Permittee shall install, operate, and maintain an alarm that triggers when the pressure drop set point is exceeded. The set point at which the alarm triggers shall be set such that the alarm sounds when the pressure drop limit established in this permit is not met. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
5.5.6	Coating Room Airflow Direction: The Permittee shall maintain airflow into the Coating Room enclosure at all times. If airflow into the enclosure is not maintained, coating operations in the Coating Room shall be shut down until airflow direction into the enclosure is restored and shall be reported as a deviation. The Permittee shall document and keep records of all deviations, including the date of malfunction, steps taken to restore airflow direction into the enclosure, and the date operation continued. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
5.5.7	Coating Room Negative Pressure Monitoring: ~~The Permittee shall continuously monitor the pressure drop across the enclosure of each coating room established during the most recent performance test following Method 204 of appendix M to 40 CFR Part 51~~. If it is discovered that negative pressure is not being maintained, either by inspection or the alarm is sounded, coating operations in the coating room shall be shut down until a negative pressure state is restored. Each violation of the pressure drop limit shall be reported as a deviation. The Permittee shall document and keep records of all deviations, including the date of malfunction, steps taken to restore the minimum negative pressure, and the date operation continued. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]

Commented [A74]: The facility is not subject to 40 CFR 63 subp. MMMM and should not be required to meet the standards of that NESHAP.

Requirement number	Requirement and citation
5.5.8	The Permittee shall install and maintain a Retro-Coat Vapor Intrusion System on the floor surfaces of each coating room in COMG 5 where t-DCE VOC coaters operate. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. Stat. 116.385, subd. 3]
5.5.9	Daily Inspection: On each day of operation, the Permittee shall inspect the floor of each coating room where t-DCE VOC coaters operate to check for degradation of the Retro-Coat Vapor Intrusion Coating System and do the following (where applicable): 1) If degradation is discovered, the Permittee shall immediately resolve the degradation. 2) If the degradation is not resolved within 24 hours, the Permittee shall immediately cease VOC-coating operations in that coating room until the degradation is corrected. 3) Notify the MPCA immediately upon ceasing VOC coating operations due to degradation on the Retro-Coat Vapor Intrusion System. 4) Photographs of all degradation areas shall be taken before and after corrective actions are taken. Photographs shall be retained in Facility records. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. Stat. 116.385, subd. 3]
5.5.10	Daily Inspection: On each day of operation, the Permittee shall inspect the and record the door status and verify the alarm system is operating with a set point at a minimum pressure drop of 0.007 inches of water for each coating room. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
COMG 6	**Indirect Heating Equipment Rule Requirements**
5.6.1	Filterable Particulate Matter <= 0.40 pounds per million Btu heat input. The potential to emit from the unit is 0.0076 lb/MMBtu due to equipment design and allowable fuels. This limit applies individually to each unit in COMG 6. [Minn. R. 7011.0515, subp. 1]
5.6.2	Opacity <= 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. [Minn. R. 7011.0515, subp. 2]
5.6.3	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
5.6.4	The Permittee shall keep records of fuel purchases showing fuel types. For the purpose of reporting emissions to the annual emission inventory. [Minn. R. 7007.0800, subp. 5, Minn. R. 7019.3000- 7019.3100]
COMG 7	**Industrial Process Equipment Rule Requirements**
5.7.1	Particulate Matter <= 0.30 grains per dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. This limit applies individually to each unit in COMG 7. [Minn. R. 7011.0715, subp. 1(A)]
5.7.2	Opacity <= 20 percent opacity. This limit applies individually to each unit in COMG 7. [Minn. R. 7011.0715, subp. 1(B)]
COMG 8	**PM10 and PM2.5: Limits and Compliance Requirements for Water-Based Spray Battery Terminal Post Coaters**
5.8.1	The Permittee shall install, operate and maintain each water-based spray battery terminal post coater subject to COMG 8 requirements inside a coating room meeting the requirements of COMG 5. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.8.2	The Permittee shall vent emissions from each water-based spray battery terminal post coater subject to COMG 8 requirements to control equipment meeting the requirements of COMG 14 whenever each water-based spray battery terminal post coater operates. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.8.3	Water-based Spray Battery Terminal Post Coater operated at the facility is subject to the requirements in COMG 1. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

Commented [A75]: Permit requirements for coating floor inspections should be consistent with the floor management plan.

Commented [A76]: Not needed: as stated in 5.6.3, fuel type is natural gas only by design.

Commented [A77]: The coaters in COMG 8 are the same as those in COMG 4. They do not need separate groups and separate (similar) requirements: the requirements could be on the EQUI level. See other comments from COMG 4.

Requirement number	Requirement and citation
5.8.4	The Permittee is prohibited from using any coating that contains any hazardous air pollutant (HAP), including the target HAPs as defined under 40 CFR Section 63.11180. [Minn. R. 7007.0800, subp. 2(A)]
5.8.5	Daily Recordkeeping. On each day of operation, the Permittee shall calculate, record, and maintain a record of the total quantity of each coating and other solids-containing material, including the solids content of each coating (as a mass fraction), used by each coater in COMG 8. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.8.6	Particulate Matter: Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate, record, and maintain a record of the following for the previous operating day using the daily usage records: 1) Total weight of water-based coating used by each unit in COMG 8, in pounds/day; and 2) Daily average hourly emissions of PM10 and PM2.5 from all water-based coaters in COMG 8 as determined elsewhere in this permit, in pounds/hour. This record shall also include solids contents of each material as determined by the Material Content requirement of this permit. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.8.7	PM < 10 micron: Daily Calculations. The Permittee shall calculate PM10 emissions from COMG 8 using the following equations: PM10WB = TPM10WB/24 TPM10WB = [(IWB1 x JWB1) + (IWB2 x JWB2) + (IWB3 x JWB3)] x (1-TE) x (1-CE1) where: PM10WB = daily average PM10 emissions from COMG 8, in pounds/hour; TPM10WB = total daily PM10 emissions from each EQUI in COMG 8, in pounds/day; IWB# = total weight of coating used in COMG 8 based on daily usage logs, in pounds/day; JWB# = solids content of coating used in IWB#, in weight percent; TE = minimum transfer efficiency allowed by the permit as of permit issuance (65 percent). Other transfer efficiencies allowed by this permit shall be based on MPCA-approved stack test results according to approved replicable methodology (ARM) requirements; and CE1 = minimum PM10 control efficiency required by COMG 14, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.8.8	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate PM2.5 emissions from COMG 8 using the following equations: PM2.5WB = TPM2.5WB/24 TPM2.5WB = [(IWB1 x JWB1) + (IWB2 x JWB2) + (IWB3 x JWB3)] x (1-TE) x (1-CE2) where: PM2.5WB = daily average PM2.5 emissions from COMG 8, in pounds/hour; TPM2.5WB = total daily PM2.5 emissions from each EQUI in COMG 8, in pounds/day; IWB# = total weight of coating used in COMG 8 based on daily usage logs, in pounds/day; JWB# = solids content of coating used in IWB#, in weight percent; TE = minimum transfer efficiency allowed by the permit as of permit issuance (65 percent). Other transfer efficiencies allowed by this permit shall be based on MPCA-approved stack test results according to approved replicable methodology (ARM) requirements; and CE2 = minimum PM2.5 control efficiency required by COMG 14, as a fraction. [Minn. R. 7007.0800, subps. 4-5]

Requirement number	Requirement and citation
5.8.9	Material Content. Solids (PM, PM<10 microns, and PM<2.5 microns) contents in coatings and other materials used in COMG 8 shall be determined by the Safety Data Sheet (SDS) or the Material Safety Data Sheet (MSDS) provided by the supplier for each material used. If a material content range is given on the SDS or the MSDS, the highest number in the range shall be used in all compliance calculations. If there is information provided in the Regulatory Section of the SDS, the highest number in the range of that section may be used. Other alternative methods approved by the MPCA may be used to determine the solids content. The Commissioner reserves the right to require the Permittee to determine the solids content of any material, according to EPA or ASTM reference methods. If an EPA or ASTM reference method is used for material content determination, the data obtained shall supersede the SDS or the MSDS. [Minn. R. 7007.0800, subp. 4-5]
5.8.10	Maximum Contents of Materials and Process Rate: The Permittee assumed certain worst-case contents of materials and process rates when determining the short-term potential to emit of units in COMG 8. These assumptions are listed in Appendix B of this permit. Increasing the process rate or changing to a material that has a higher content of any of the given pollutants, or an addition of a pollutant not listed in Appendix B, is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150. [Minn. R. 7005.0100, subp. 35a]
5.8.11	Transfer efficiency for PM < 10 micron: Protocol for Re-Setting the Transfer efficiency Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission rates in pound PM10 per hour and transfer efficiency in pound PM10 per pound of solids (as applied) as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per hour and pound of coating solids as applied in the performance test report required by Minn. R. 7017.2035, subp. 1. The transfer efficiency for PM < 10 micron used for calculating emissions shall be re-set to the 3-hour average transfer efficiency in pound PM10 per pound of coating solids as applied, measured during the most recent MPCA-approved emission factor performance test. The new transfer efficiency for PM < 10 micron: used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.8.12	Transfer efficiency for PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Transfer efficiency for PM < 10 micron Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
5.8.13	Transfer efficiency for PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.8.14	Transfer efficiency for PM < 2.5 micron: Protocol for Re-Setting the Transfer efficiency Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission rates in pound PM2.5 per hour and transfer efficiency in pound PM2.5 per pound of solids (as applied) as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per hour and pound of coating solids as applied in the performance test report required by Minn. R.

Commented [A78]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A79]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Requirement number	Requirement and citation
	7017.2035, subp. 1. The transfer efficiency for PM < 2.5 micron used for calculating emissions shall be re-set to the 3-hour average transfer efficiency in pound PM2.5 per pound of coating solids as applied, measured during the most recent MPCA-approved emission factor performance test. The new transfer efficiency for PM < 2.5 micron: used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.8.15	Transfer efficiency for PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Transfer efficiency for PM < 2.5 micron Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
5.8.16	Transfer efficiency for PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
COMG 9	**Sub-Slab Vapor Mitigation System: Operation Requirements**
5.9.1	The Permittee shall vent emissions from EQUI 167 to a stack/vent meeting the requirements of STRU 41 whenever EQUI 167 operates. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.9.2	The Permittee shall operate and maintain a Sub-Slab Depressurization and Solvent Vapor Extraction system (EQUI 167), and vent emissions to two 2,000-pound granulated activated carbon (GAC) canisters connected in-series (TREA 50 and TREA 51) such that all solvent vapor emissions from beneath the facility floor are captured and vented through the remediation stack (STRU 41) following the requirements of this permit. The requirement to vent emissions from EQUI 167 to TREA 50 and 51 terminates when the MPCA Remediation Division approves the removal of TREA 50 and TREA 51 in writing. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
5.9.3	Sampling Locations: The Permittee shall install and maintain gas sampling ports at the following locations required by the MPCA Remediation Division. This includes but is not limited to sampling ports at the inlet side, in between and at the effluent side of the two carbon canisters controlling emissions from EQUI 167. The requirement to install and maintain gas sampling ports at these locations terminates when the MPCA Remediation Division approves the removal of TREA 50 and TREA 51 in writing. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
5.9.4	The Permittee shall obtain a gas sample from the Solvent Vapor Extraction system at the locations and with the frequency required by the MPCA Remediation Division. If sampling is required, the Permittee shall send each sample to a third-party analytical laboratory for analysis following EPA Method TO-15. The requirement to conduct quarterly sampling of emissions from Solvent Vapor Extraction system terminates when the MPCA Remediation Division approves the removal of TREA 50 and TREA 51 in writing. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
5.9.5	Sample Analytical Results Recordkeeping: If sampling and analysis is required by the MPCA Remediation Division, the Permittee shall maintain a record of the analytical test results on each required gas sample, including the date of the test and the concentration of emissions from each VOC

Commented [A80]: There need be no sub-slab mitigation system requirements in the air permit as the analysis showed no adverse impacts to emissions and no adverse health effects.

Commented [A81]: This is unnecessary and not a formal emission limit based on modeling but rather a threshold requiring changing of carbon canisters.

Commented [A82]: Testing and modeling shows the GAC is unnecessary and does not belong in the air permit. The Remediation group oversees the mitigation system operation.

Commented [A83]: This should be removed from the permit as noted above.

Requirement number	Requirement and citation
	species measured by EPA Method TO-15. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
5.9.6	~~1,2 (trans-) Dichloroethylene: Emissions Calculations: If required by the MPCA, the Permittee shall calculate and record emission rates of 1,2 (trans-) Dichloroethylene and of all the other chemicals analyzed by EPA Method TO-15, in pounds per day, using the following equation:~~ ~~SVR = BTi x Vrem~~ ~~Where:~~ ~~SVR = daily emissions of 1,2 (trans-) Dichloroethylene (or other chemicals analyzed by EPA Method TO-15), in pound/day;~~ ~~BTi = concentration of 1,2 (trans-) Dichloroethylene (or other chemicals analyzed by EPA Method TO-15) measured for the last required sample, in pounds/actual cubic foot; and~~ ~~Vrem = exhaust flow rate from the solvent vapor remediation stack, in standard cubic feet/day. As of permit issuance, the exhaust flow rate at the remediation stack is 695 standard cubic feet per minute (1,000,800 standard cubic feet per day). Other standard exhaust flow rates from the solvent vapor remediation stack allowed by this permit shall be based on MPCA-approved test results according to approved replicable methodology (ARM) requirements. Any subsequent standard exhaust flow rate from the solvent vapor remediation stack must be measured concurrently with the measurement of 1,2 (trans-) Dichloroethylene concentration.~~ ~~Records of the BTi value obtained for any given sample shall be made available as required by MPCA. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]~~
5.9.7	The Permittee shall operate and maintain the sub-slab depressurization and solvent vapor extraction system, and carbon canisters in COMG 9 in accordance with the Operation and Maintenance (O & M) Plan approved by the MPCA Remediation Division. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. The requirement to maintain TREA 50 and 51 terminates when the MPCA Remediation Division approves the removal of TREA 50 and TREA 51 in writing. [Minn. R. 7007.0800, subp. 14, Minn. Stat. 116.07, subd. 9(2)]
5.9.8	Carbon Canister Replacement: After 300 days of continuous service, or sooner if the manufacturer recommends replacement before 300 days of continuous service, the Permittee shall perform the following procedure: 1) Replace the lead carbon canister (first in-series) with a fresh carbon canister; 2) Move the lag carbon canister (second in-series) to the lead position; and 3) Install the new carbon canister as the lag carbon canister (second in-series). The Permittee shall keep records of the date of each canister change. The requirement for carbon canister replacement terminates when the MPCA Remediation Division approves the removal of TREA 50 and TREA 51 in writing. [Minn. R. 7007.0800, subp. 2(A), Minn. Stat. 116.07, subd. 9(2)]
5.9.9	Carbon Canister Removal. The Permittee is authorized to remove carbon canister control equipment (TREA 50 and TREA 51) upon written approval from the MPCA Remediation Division without obtaining a major permit amendment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
5.9.10	Routine Inspections: The Permittee shall verify operation of the sub-slab vapor remediation system and visually inspect the condition of each carbon canister in COMG 9 with respect to alignment, saturation, and any other condition that may affect the filter's performance with the frequency required by MPCA Remediation Division. The Permittee shall maintain a ~~daily~~ written record of system and filter inspections. The requirement for routine inspections of carbon canisters terminates when the MPCA Remediation Division approves the removal of TREA 50 and TREA 51 in writing. [Minn. R. 7007.0800, subp. 2(A), Minn. Stat. 116.07, subd. 9(2)]

Commented [A84]: This is not needed. Delete this requirement.

Commented [A85]: Quarterly inspections to match 5.9.11 are more appropriate.

Requirement number	Requirement and citation
5.9.11	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the Solvent Vapor Extraction system and control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4-5, Minn. Stat. 116.07, subd. 9(2)]
5.9.12	Corrective Actions: If the sub-slab depressurization and solvent vapor extraction system, carbon canister or any of their components in COMG 9 are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the sub-slab depressurization and solvent vapor extraction system and carbon canisters. The Permittee shall keep a record of the type and date of any corrective action taken. The requirement for corrective actions on carbon canisters terminates when the MPCA Remediation Division approves the removal of TREA 50 and TREA 51 in writing. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5, Minn. Stat. 116.07, subd. 9(2)]
5.9.13	Protocol for Resetting the Standard Exhaust Flow Rate from the Solvent Vapor Remediation Stack: The Permittee may conduct performance testing to measure the standard exhaust flow rate and temperature from the solvent vapor remediation stack as allowed elsewhere in this permit. If the established standard exhaust flow rate from the solvent vapor remediation stack are to be reset, the reset shall be based on the standard exhaust flow rate from the solvent vapor remediation stack values recorded during the most recent MPCA-approved performance test where compliance with applicable emission limits was demonstrated. The established standard exhaust flow rate from the solvent vapor remediation stack shall be reset as follows: - if the highest standard exhaust flow rate recorded during the test are higher than the respective established standard exhaust flow rate, it shall be reset to the highest standard exhaust flow rate resulting from the test; or - if the highest standard exhaust flow rate recorded during the test are lower than the respective established emission factor, it shall be reset to the highest standard exhaust flow rate resulting from the test. The new standard exhaust flow rate shall be effective upon receipt of the Notice of Compliance letter that approves the test results and shall be incorporated into the permit when the permit is next amended. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.9.14	~~The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting Standard Exhaust Flow Rate allowed by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.9.15	Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the Notice of Compliance letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.9.16	The Permittee shall operate EQUI 167 meeting the requirements of COMG 1. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 10	**NOx: North Building Space Heating Capacity and Operation Limits**

Commented [A86]: Permittee must submit an approvable test plan, not a major permit amendment.

Requirement number	Requirement and citation
5.10.1	The Permittee shall limit emissions of PM < 10 micron <= 0.07966 pounds per hour 3-hour average. This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.10.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.07966 pounds per hour 3-hour average. This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.10.3	The Permittee shall limit emissions of Nitrogen Oxides <= 1.0482 pounds per hour 3-hour average. This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
5.10.4	The Permittee shall limit emissions of Lead <= 0.000005 pounds per hour 3-hour average. This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
5.10.5	The Permittee shall limit total maximum Heat Input <= 10.69 million Btu per hour. This limit applies to the combined heat input of all the space heating units in COMG 10 located in the North Building (STRU 38). If the Permittee replaces any existing direct heating equipment, adds new direct heating equipment, or modifies the existing equipment, such equipment is subject to this permit limit as well as all of the requirements in COMG 10. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. The Permittee is not required to complete emissions calculations described in Minn. R. 7007.1200, subp. 2. A permit amendment will still be needed regardless of the emissions increase if the change will be subject to a new applicable requirement or requires revisions to the limits or monitoring and recordkeeping in this permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.10.6	The Permittee shall keep an inventory of combustion units operating in the North Building (STRU 38), including manufacturer, model number, maximum-rated heat input capacity, in million British Thermal Units per hour, and location of the combustion unit. These records shall be kept up-to-date and available for inspection. [Minn. R. 7007.0800, subp. 5]
5.10.7	The Permittee shall not operate the space heating equipment during the months of June, July and August. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.10.8	Daily Recordkeeping. On each day of operation, the Permittee shall record the space heaters operating in the North Building (STRU 38). [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 11	**Nederman Filter and Smog Hog Control Equipment Train - Melt Pots**
5.11.1	The Permittee shall operate and maintain in-series control equipment train such that it achieves an overall control efficiency for Particulate Matter >= 97.0 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.11.2	The Permittee shall operate and maintain in-series control equipment train such that it achieves an overall control efficiency for PM < 10 micron >= 97.0 percent control efficiency. [Minn. R. 7007.0080, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.11.3	The Permittee shall operate and maintain in-series control equipment train such that it achieves an overall control efficiency for PM < 2.5 micron >= 97.0 percent control efficiency. [Minn. R. 7007.0800,

Requirement number	Requirement and citation
	subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.11.4	The Permittee shall operate and maintain in-series control equipment train such that it achieves an overall control efficiency for Lead >= 86.0 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.11.5	The Permittee shall vent emissions from EQUIs 101, 102, 103, 104, and 221 to an in-series control equipment train meeting the permit requirements under COMG 11. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.11.6	If the Permittee replaces any control equipment unit subject to the requirements in COMG 11, the replacement in-series control equipment train must meet or exceed the control efficiency requirements for COMG 11 as well as comply with all other requirements of COMG 11. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.11.7	The Permittee shall operate and maintain each control equipment train in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.11.8	Daily Inspections: Once each operating day, the Permittee shall visually inspect the condition of each control equipment train with respect to any other condition that may affect the control equipment train's performance. The Permittee shall maintain a daily written record of these inspections. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, sub. 4a(a)]
5.11.9	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment train components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4 & 5]
5.11.10	Corrective Actions: If the control equipment train or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan. The Permittee shall keep a record of the type and date of any corrective action taken. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4 & 5]
5.11.11	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) for each Smog Hog in COMG 11 at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily. [Minn. R. 7007.0800, subps. 4-5]
5.11.12	~~Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of each Smog Hog at all times. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]~~
5.11.13	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer of the smog hogs, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts.

Commented [A87]: Same comment as for 5.14.6 and 5.14.7. No set frequency for opening the Nederman filter units for inspection.

Commented [A88]: Same comment as for 5.14.6 and 5.14.7. No set frequency for opening the Nederman filter units for inspection.

Commented [A89]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Requirement number	Requirement and citation
	The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4-5]
~~5.11.14~~	~~Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the Smog Hog On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]~~
5.11.15	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the Smog Hog components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4-5]
5.11.16	Pre-Filter and Cell Maintenance for Smog Hogs: The Permittee shall transport pre-filters and cells properly ~~in leak-proof containers~~ during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher wastewater, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]
5.11.17	Corrective Actions for smog hogs: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range; or - the Smog Hog or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O&M Plan for the Smog Hog. The Permittee shall keep a record of the type and date of any corrective action taken for the Smog Hog. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4-5]
COMG 12	**Nederman Filter and Smog Hog Control Equipment Train - Die Casting**
5.12.1	The Permittee shall operate and maintain in-series control equipment train such that it achieves an overall control efficiency for Particulate Matter >= 86.6 percent control efficiency. [Minn. R. 7007.0800, subp. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.12.2	The Permittee shall operate and maintain in-series control equipment train such that it achieves an overall control efficiency for PM < 10 micron >= 86.6 percent control efficiency. [Minn. R. 7007.0800, subp. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.12.3	The Permittee shall operate and maintain in-series control equipment train such that it achieves an overall control efficiency for PM < 2.5 micron >= 86.6 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.12.4	The Permittee shall vent emissions from EQUIs 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 146, 147, 149, 150, 152, 153, 154, 155, 156, 157, and 158 to an in-series control equipment train meeting the permit requirements under COMG 12. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.12.5	If the Permittee replaces any control equipment unit subject to the requirements of COMG 12, the replacement in-series control equipment train must meet or exceed the control efficiency requirements for COMG 12 as well as comply with all other requirements of COMG 12. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment,

Commented [A90]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Commented [A91]: Leak-proof containers are not necessary to protect employee or public health.

Requirement number	Requirement and citation
	as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.12.6	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the Nederman filter manufacturer's specifications, the Permittee shall inspect the control equipment train components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4 & 5]
5.12.7	The Permittee shall operate and maintain each control equipment train in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.12.8	Daily Inspections: Once each operating day, the Permittee shall visually inspect the condition of each control equipment train with respect to any other condition that may affect the control equipment train's performance. The Permittee shall maintain a daily written record of these inspections. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
5.12.9	Corrective Actions: If the control equipment train or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan. The Permittee shall keep a record of the type and date of any corrective action taken. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4 & 5]
5.12.10	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) for each Smog Hog in COMG 11 at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily. [Minn. R. 7007.0800, subps. 4-5]
5.12.11	~~Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of each Smog Hog at all times. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]~~
5.12.12	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer of the smog hogs, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4-5]
5.12.13	~~Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the Smog Hog On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]~~
5.12.14	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the Smog Hog components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4-5]

Commented [A92]: Same comment as for 5.14.6 and 5.14.7. No set frequency for opening the Nederman filter units for inspection.

Commented [A93]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Commented [A94]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Requirement number	Requirement and citation
5.12.15	Pre-Filter and Cell Maintenance for Smog Hogs: The Permittee shall transport pre-filters and cells ~~in leak-proof containers~~properly during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher wastewater, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]
5.12.16	Corrective Actions for smog hogs: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range; or - the Smog Hog or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O&M Plan for the Smog Hog. The Permittee shall keep a record of the type and date of any corrective action taken for the Smog Hog. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4-5]
COMG 13	**Direct Heating Equipment Rule Requirements**
5.13.1	The Permittee shall limit Particulate Matter <= 0.30 grains per dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. This limit applies to each individual unit in COMG 13. [Minn. R. 7011.0610, subp. 1(A)(1)]
5.13.2	The Permittee shall limit Opacity <= 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. This limit applies to each individual unit in COMG 13. [Minn. R. 7011.0610, subp. 1(A)(2)]
5.13.3	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
5.13.4	The Permittee shall keep records of fuel purchases showing fuel types. [Minn. R. 7007.0800, subp. 5]
COMG 14	**HEPA Filters - Spray Coaters**
5.14.1	The Permittee shall operate and maintain each piece of control equipment in this group such that it achieves a control efficiency for Particulate Matter >= 99.0 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.14.2	The Permittee shall operate and maintain each piece of control equipment in this group such that it achieves a control efficiency for PM < 10 micron >= 99.0 percent control efficiency. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.14.3	The Permittee shall operate and maintain each piece of control equipment in this group such that it achieves a control efficiency for PM < 2.5 micron >= 99.0 percent control efficiency. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.14.4	The Permittee shall operate and maintain the HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.14.5	If the Permittee replaces any HEPA filter subject to COMG 14 requirements, the replacement control must meet or exceed the control efficiency requirements of COMG 14 as well as comply with all other requirements of COMG 14. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-

Commented [A95]: Leak-proof containers are not necessary to protect employee or public health.

Requirement number	Requirement and citation
	7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.14.6	Daily Inspections: Once each operating day, the Permittee shall visually inspect the condition of each HEPA filter with respect to alignment, saturation, tears, holes and any other condition that may affect the filter's performance. The Permittee shall maintain a daily written record of filter inspections. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.14.7	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.14.8	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
COMG 15	**NOx: South Building Space Heating Capacity and Operation Limits**
5.15.1	The Permittee shall limit emissions of PM < 10 micron <= 0.0171 pounds per hour 3-hour average. This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.15.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.0171 pounds per hour 3-hour average. This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.15.3	The Permittee shall limit emissions of Nitrogen Oxides <= 0.2248 pounds per hour 3-hour average. This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
5.15.4	The Permittee shall limit emissions of Lead <= 0.000001 pounds per hour 3-hour average. This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
5.15.5	The Permittee shall limit total maximum Heat Input <= 2.29 million Btu per hour. This limit applies to the combined heat input of all space heating units in COMG 15 located in the South Building (STRU 42). If the Permittee replaces any existing direct heating equipment, adds new direct heating equipment, or modifies the existing equipment, such equipment is subject to this permit limit as well as all of the requirements in COMG 15. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. The Permittee is not required to complete emissions calculations described in Minn. R. 7007.1200, subp. 2. A permit amendment will still be needed regardless of the emissions increase if the change will be subject to a new applicable requirement or requires revisions to the limits or monitoring and recordkeeping in this permit. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.15.6	The Permittee shall keep an inventory of combustion units in the South Building (STRU 42), including manufacturer, model number, maximum-rated heat input capacity, in million British Thermal Units per hour, and location of the combustion unit. The Permittee shall update the list to include any replaced, modified, or new equipment prior to making the change. The list shall correlate the units to

Commented [A96]: Water Gremlin has elected to use Nederman HEPA filters for the COMG 14 filter requirement. Similar changes are requested here as were granted for Nederman units on Diecast and Melt Pot operations. As per the Nederman recommendation, daily inspections should verify if the pressure drop reading is within the red or green areas of the gauge. The filters are not meant for frequent physical inspections, and daily door openings may damage the filters. Further, opening the doors will impact capture efficiency. See letter from the supplier dated August 18, 2022.

Commented [A97]: Same comment as for 5.14.6. Manufacturer does not recommend opening the Nederman filter units for inspection on any particular frequency.

Requirement number	Requirement and citation
	the Subject Item numbers used in this permit and shall include the data on GI-04, GI-05B, GI-05C, and GI-05F. The date of construction shall be the date the change was made for replaced, modified, or new equipment. The list shall correlate the units to the Subject Item numbers used in this permit and shall include the data on GI-04, GI-05B, GI-05C, and GI-05F. The date of construction shall be the date the change was made for replaced, modified, or new equipment. [Minn. R. 7007.0800, subp. 2(A)]
5.15.7	The Permittee shall not operate the space heating equipment during the months of June, July and August. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.15.8	Daily Recordkeeping. On each day of operation, the Permittee shall record the space heaters operating in the South Building (STRU 42). [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 16	**Die Casting Annual Throughput and Lead Emission Limits**
5.16.1	The Permittee shall limit Process Throughput <= 39,355.50 tons per year 365-day rolling sum. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
5.16.2	The Permittee shall limit captured and controlled emissions of Lead <= 48.21 pounds per year 365-day rolling sum to be calculated each operating day for the previous 365-day period as described later in this permit. This limit applies to captured and controlled lead emissions from all EQUIs in COMG 16. The captured and controlled emissions from each EQUI in COMG 16 are the stack lead emissions calculated at each corresponding EQUI stack by using the controlled lead emission factor listed in Appendix D. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
5.16.3	The Permittee shall limit uncaptured emissions of Lead <= 8.46 pounds per year 365-day rolling sum to be calculated each operating day for the previous 365-day period as described later in this permit. This limit applies to uncaptured lead emissions from all EQUIs in COMG16. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
5.16.4	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by all EQUIs in COMG 16. This shall be based on written usage logs; and 2) total process throughput from all EQUIs in COMG 16 for the previous 365-day period by calculating the total process throughput for the previous 365 days. [Minn. R. 7007.0800, subps. 2(A) &2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
5.16.5	Lead: Captured and Controlled Emissions: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) total captured and controlled lead emissions from all EQUIs in COMG 16 for the previous operating day. The captured and controlled emissions for each EQUI in COMG 16 must be calculated using formulas specified in this permit; and 2) 365-day rolling sum annual captured and controlled lead emissions emitted through each STRU to which from each EQUI in COMG 16 vents for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
5.16.6	Lead: Uncaptured Emissions: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) total uncaptured lead emissions from all EQUIs in COMG 16 for the previous operating day. The uncontrolled emissions for each EQUI in COMG 16 must be calculated using formulas specified in this permit, and

Requirement number	Requirement and citation
	2) 365-day rolling sum annual uncaptured lead emissions emitted through each STRU to which from each EQUI in COMG 16 vents for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
5.16.7	Captured and Controlled Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from COMG 16 using the following equations: COMG16CL = STRU15L365S + STRU16L365S + STRU17L365S + STRU74L365S + STRU20L365S + STRU75L365S + STRU23L365S + STRU24L365S + STRU25L365S + STRU26L365S + STRU30L365S + STRU31L365S + STRU32L365S + STRU33L365S = STRU34L365S + STRU35L365S where: COMG16CL = 365-day rolling sum captured and controlled lead emissions emitted from all EQUIs in COMG 16 for the previous 365-day period, in pounds/year; and STRU#L365S = 365-day rolling sum captured and controlled lead emissions emitted through the STRU# to which each EQUI in COMG 16 vents for the previous 365-day period, in pounds/year. [Minn. R. 7007.0800, subps. 4-5]
5.16.8	Uncaptured Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual uncaptured lead emissions from COMG 16 using the following equations: COMG16UL = STRU43L365S + STRU44L365S + STRU45L365S + STRU46L365S + STRU47L365S + STRU48L365S + STRU49L365S + STRU50L365S + STRU51L365S + STRU52L365S + STRU53L365S + STRU56L365S where: COMG16UL = 365-day rolling sum uncaptured lead emissions emitted from all EQUIs in COMG 16 for the previous 365-day period, in pounds/year; and STRU#L365S = 365-day rolling sum uncaptured lead emissions emitted through the STRU# to which each EQUI in COMG 16 vents for the previous 365-day period, in pounds/year. [Minn. R. 7007.0800, subps. 4-5]
EQUI 82	**Battery Terminal Post Coater 6**
5.17.1	At the time of permit issuance, EQUI 82 is a UV spray coater as described in Appendix B of this permit and shall comply with the requirements under COMG 1 and COMG 5. EQUI 82 shall comply with the requirements under COMG 2 except for the condition to operate with control equipment meeting the requirements in COMG 14. EQUI 82 may be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subp. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 84	**Battery Terminal Post Coater 9**
5.18.1	At the time of permit issuance, EQUI 84 is a UV spray coater as described in Appendix B of this permit and shall comply with the requirements under COMG 1, COMG 2, and COMG 5. EQUI 84 may be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
5.18.2	The Permittee shall vent emissions from EQUI 84 to control equipment meeting the requirements of TREA 55 whenever EQUI 84 operates. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 85	**Battery Terminal Post Coater 10**
5.19.1	At the time of permit issuance, EQUI 85 is a water-based drip coater as described in Appendix B of this permit and it exhausts emissions through STRU 73. EQUI 85 shall comply with the requirements under

Requirement number	Requirement and citation
	COMG 1 and COMG 5. Compliance with COMG 5 is required for as long as EQUI 85 exhausts emissions through STRU 73. EQUI 85 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 87	**Battery Terminal Post Coater 12**
5.20.1	At the time of permit issuance, EQUI 87 is a VOC dip coater as described in Appendix B of this permit and shall comply with the requirements under COMG 1 and COMG 5. EQUI 87 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 88	**Battery Terminal Post Coater 15**
5.21.1	At the time of permit issuance, EQUI 88 is a VOC or water-based drip/spray coater as described in Appendix B of this permit and shall comply with requirements under COMG 1, COMG 4 when operating with VOC coatings. EQUI 88 shall comply with requirements under COMG 1, COMG 5, and COMG 8 when operating with water-based coating. EQUI 88 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.21.2	The Permittee shall vent emissions from EQUI 88 to control equipment meeting the requirements of TREA 56 whenever EQUI 88 operates. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 89	**Battery Terminal Post Coater 17**
5.22.1	At the time of permit issuance, EQUI 89 is a water-based dip coater as described in Appendix B of this permit and it exhausts emissions through STRU 73. EQUI 89 shall comply with requirements under COMG 1 and COMG 5. Compliance with COMG 5 is required for as long as EQUI 89 exhausts emissions through STRU 73. EQUI 89 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 92	**Battery Terminal Post Coater 20**
5.23.1	At the time of permit issuance, EQUI 92 is a water-based dip coater as described in Appendix B of this permit and it exhausts emissions through STRU 73. EQUI 92 shall comply with requirements under COMG 1 and COMG 5. Compliance with COMG 5 is required for as long as EQUI 92 exhausts emissions through STRU 73. EQUI 92 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 93	**Battery Terminal Post Coater 21**
5.24.1	At the time of permit issuance, EQUI 93 is a VOC or water-based dip coater as described in Appendix B of this permit and shall comply with requirements under COMG 1 and COMG 5. EQUI 93 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 94	**Battery Terminal Post Coater 22**
5.25.1	At the time of permit issuance, EQUI 94 is a VOC or water-based drip coater as described in Appendix B of this permit and shall comply with requirements under COMG 1 and COMG 5. EQUI 94 may only

Requirement number	Requirement and citation
	be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R, 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 95	**Battery Terminal Post Coater 23**
5.26.1	At the time of permit issuance, EQUI 95 is a VOC or water-based spray coater as described in Appendix B of this permit. EQUI 95 shall comply with requirements under COMG 1, COMG 4 and COMG 5 when operating with VOC coating. EQUI 95 shall comply with requirements under COMG 1, COMG 5, and COMG 8 when operating with water-based coating. EQUI 95 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.26.2	The Permittee shall vent emissions from EQUI 95 to control equipment meeting the requirements of TREA 57 whenever EQUI 95 operates. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 97	**Battery Terminal Post Coater 25**
5.27.1	At the time of permit issuance, EQUI 97 is a water-based dip coater as described in Appendix B of this permit and it exhausts emissions through STRU 73. EQUI 97 shall comply with requirements under COMG 1 and COMG 5. Compliance with COMG 5 is required for as long as EQUI 97 exhausts emissions through STRU 73. EQUI 97 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 98	**Battery Terminal Post Coater 26**
5.28.1	At the time of permit issuance, EQUI 98 is a VOC or water-based drip coater as described in Appendix B of this permit and shall comply with requirements under COMG 1 and COMG 5. EQUI 98 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 99	**Battery Terminal Post Coater 27**
5.29.1	At the time of permit issuance, EQUI 99 is a VOC or water-based dip coater as described in Appendix B of this permit and shall comply with requirements under COMG 1 and COMG 5. EQUI 99 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 100	**Battery Terminal Post Coater 28**
5.30.1	At the time of permit issuance, EQUI 100 is a VOC or water-based drip coater as described in Appendix B of this permit and shall comply with requirements under COMG 1 and COMG 5. EQUI 100 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 101	**CF Scrap Re-Melt Pot**

Requirement number	Requirement and citation
5.31.1	The Permittee must limit Process Throughput <= 2180.0 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.31.2	Process Throughput: Daily Recordkeeping. On each day of operation, the Permittee shall calculate, record, and maintain a record of the total weight of each lead-containing material processed by EQUI 101. This shall be based on written usage logs. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.31.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 101 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.31.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 101 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.31.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equation: EQUI101PM10 = [A x B x (1-CE1)] / 24 Where: EQUI101PM10 = daily average PM10 emissions from EQUI 101, in pounds/hour; A = total weight of lead-containing material processed by EQUI 101 for the previous operating day, in pounds/day; and B = uncontrolled PM10 emission factor for EQUI 101 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 11, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.31.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equation: EQUI101PM2.5 = [A x C x (1-CE2)] / 24 Where: EQUI101PM2.5 = daily average PM2.5 emissions from EQUI 101, in pounds/hour; A = total weight of lead-containing material processed by EQUI 101 for the previous operating day, in pounds/day; and C = uncontrolled PM2.5 emission factor for EQUI 101 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 11, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.31.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equation: EQUI101L = D x E x (1 - CE3) Where:

Requirement number	Requirement and citation
	EQUI101L = total lead emissions from EQUI 101, in pounds/day; D = total weight of lead-containing material processed by EQUI 101 for the previous operating day, in pounds/day; and E = uncontrolled lead emission factor for EQUI 101 listed in Appendix D, as a fraction; and CE3 = minimum overall lead control efficiency required by COMG 11, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.31.8	The Permittee shall vent melt emissions from EQUI 101 to control equipment meeting the requirements of TREA 1 and TREA 60 operated in-series, and COMG 11 whenever EQUI 101 operates. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.31.9	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
5.31.10	The Permittee shall vent melt emissions from EQUI 101 to a stack/vent meeting the requirements of STRU 1 whenever EQUI 101 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.31.11	The Permittee shall vent combustion emissions from EQUI 101 to a stack/vent meeting the requirements of STRU 68 whenever EQUI 101 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.31.12	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.31.13	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.31.14	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.31.15	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate

Commented [A98]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A99]: Permittee needs an approvable test plan, not to submit a major permit application.

Commented [A100]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Requirement number	Requirement and citation
	in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.31.16	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.31.17	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.31.18	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.31.19	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.31.20	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 102	**Small Re-Melt Pot**
5.32.1	The Permittee must limit Process Throughput <= 1000.0 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.32.2	Process Throughput: Daily Recordkeeping. On each day of operation, the Permittee shall calculate, record, and maintain a record of the total weight of each lead-containing material processed by EQUI 102. This shall be based on written usage logs. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.32.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following:

Commented [A101]: Permittee needs an approvable test plan, not to submit a major permit application.

Commented [A102]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
	1) The total weight of each lead-containing material processed by EQUI 102 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.32.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 102 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.32.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equation: EQUI102PM10 = [A x B x (1-CE1)] / 24 Where: EQUI102PM10 = daily average PM10 emissions from EQUI 102, in pounds/hour; A = total weight of lead-containing material processed by EQUI 102 for the previous operating day, in pounds/day; and B = uncontrolled PM10 emission factor for EQUI 102 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 11, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.32.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equation: EQUI102PM2.5 = [A x C x (1-CE2)] / 24 Where: EQUI102PM2.5 = daily average PM2.5 emissions from EQUI 102, in pounds/hour; A = total weight of lead-containing material processed by EQUI 102 for the previous operating day, in pounds/day; and C = uncontrolled PM2.5 emission factor for EQUI 102 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 11, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.32.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equation: EQUI102L = D x E x (1 - CE3) Where: EQUI102L = total lead emissions from EQUI 102, in pounds/day; D = total weight of lead-containing material processed by EQUI 102 for the previous operating day, in pounds/day; E = uncontrolled lead emission factor for EQUI 102 listed in Appendix D, as a fraction; and CE3 = minimum overall lead control efficiency required by COMG 11, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.32.8	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
5.32.9	The Permittee shall vent melt emissions from EQUI 102 to control equipment meeting the requirements of TREA 1 and TREA 60 operated in-series, and COMG 11 whenever EQUI 102 operates.

Requirement number	Requirement and citation
	[Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.32.10	The Permittee shall vent melt emissions from EQUI 102 to a stack/vent meeting the requirements of STRU 1 whenever EQUI 102 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.32.11	The Permittee shall vent combustion emissions from EQUI 102 to a stack/vent meeting the requirements of STRU 68 whenever EQUI 102 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.32.12	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.32.13	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.32.14	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.32.15	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.32.16	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~

Commented [A103]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A104]: Permittee needs an approvable test plan, not to submit a major permit application.

Commented [A105]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A106]: Strike this: a major amendment should not be needed to propose another method for stack testing. That is what the approval of the test plan is for.

Requirement number	Requirement and citation
5.32.17	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.32.18	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.32.19	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.32.20	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.32.21	The Permittee shall not operate EQUI 102 and EQUI 103 simultaneously. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 103	**Doe Run Melt Pot**
5.33.1	The Permittee must limit Process Throughput <= 240.0 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.33.2	Process Throughput: Daily Recordkeeping. On each day of operation, the Permittee shall calculate, record, and maintain a record of the total weight of each lead-containing material processed by EQUI 103. This shall be based on written usage logs. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.33.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 103 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.33.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following:

Commented [A107]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
	1) The total weight of each lead-containing material processed by EQUI 103 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.33.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equation: EQUI103PM10 = [A x B x (1-CE1)] / 24 Where: EQUI103PM10 = daily average PM10 emissions from EQUI 103, in pounds/hour; A = total weight of lead-containing material processed by EQUI 103 for the previous operating day, in pounds/day; and B = uncontrolled PM10 emission factor for EQUI 103 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 11, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.33.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equation: EQUI103PM2.5 = [A x C x (1-CE2)] / 24 Where: EQUI103PM2.5 = daily average PM2.5 emissions from EQUI 103, in pounds/hour; A = total weight of lead-containing material processed by EQUI 103 for the previous operating day, in pounds/day; and C = uncontrolled PM2.5 emission factor for EQUI 103 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 11, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.33.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equation: EQUI103L = D x E x (1 - CE3) Where: EQUI103L = total lead emissions from EQUI 103, in pounds/day; D = total weight of lead-containing material processed by EQUI 103 for the previous operating day, in pounds/day; and E = uncontrolled lead emission factor for EQUI 103 listed in Appendix D, as a fraction; and CE3 = minimum overall lead control efficiency required by COMG 11, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.33.8	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
5.33.9	The Permittee shall vent melt emissions from EQUI 103 to control equipment meeting the requirements of TREA 1 and TREA 60 operated in-series, and COMG 11 whenever EQUI 103 operates. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.33.10	The Permittee shall vent melt emissions from EQUI 103 to a stack/vent meeting the requirements of STRU 1 whenever EQUI 103 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.33.11	The Permittee shall vent combustion emissions from EQUI 103 to a stack/vent meeting the requirements of STRU 69 whenever EQUI 103 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

Requirement number	Requirement and citation
5.33.12	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.33.13	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.33.14	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.33.15	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.33.16	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.33.17	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.33.18	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee

Commented [A108]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A109]: Permittee needs an approvable test plan, not to submit a major permit application.

Commented [A110]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A111]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
	shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.33.19	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.33.20	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.33.21	The Permittee shall not operate EQUI 102 and EQUI 103 simultaneously. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 104	**CF Re-Melt Pot**
5.34.1	The Permittee must limit Process Throughput <= 4000.0 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.34.2	Process Throughput: Daily Recordkeeping. On each day of operation, the Permittee shall calculate, record, and maintain a record of the total weight of each lead-containing material processed by EQUI 104. This shall be based on written usage logs. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.34.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 104 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.34.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 104 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.34.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equation: EQUI104PM10 = [A x B x (1-CE1)] / 24 Where:

Commented [A112]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
	EQUI104PM10 = daily average PM10 emissions from EQUI 104, in pounds/hour; A = total weight of lead-containing material processed by EQUI 104 for the previous operating day, in pounds/day; and B = uncontrolled PM10 emission factor for EQUI 104 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 11, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.34.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equation: EQUI104PM2.5 = [A x C x (1-CE2)] / 24 Where: EQUI104PM2.5 = daily average PM2.5 emissions from EQUI 104, in pounds/hour; A = total weight of lead-containing material processed by EQUI 104 for the previous operating day, in pounds/day; and C = uncontrolled PM2.5 emission factor for EQUI 104 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 11, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.34.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equation: EQUI104L = D x E x (1 - CE3) Where: EQUI104L = total lead emissions from EQUI 104, in pounds/day; D = total weight of lead-containing material processed by EQUI 104 for the previous operating day, in pounds/day; and E = uncontrolled lead emission factor for EQUI 104 listed in Appendix D, as a fraction; and CE3 = minimum overall lead control efficiency required by COMG 11, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.34.8	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
5.34.9	The Permittee shall vent melt emissions from EQUI 104 to control equipment meeting the requirements of TREA 1 and TREA 60 operated in-series, and COMG 11 whenever EQUI 104 operates. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.34.10	The Permittee shall vent melt emissions from EQUI 104 to a stack/vent meeting the requirements of STRU 1 whenever EQUI 104 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.34.11	The Permittee shall vent combustion emissions from EQUI 104 to a stack/vent meeting the requirements of STRU 68 whenever EQUI 104 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.34.12	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-

Commented [A113]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Requirement number	Requirement and citation
	approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.34.13	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.34.14	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.34.15	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.34.16	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.34.17	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.34.18	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and

Commented [A114]: Permittee needs an approvable test plan, not to submit a major permit application.

Commented [A115]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A116]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
	shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.34.19	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.34.20	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 113	**Tool room 1 Abrasive Blasting**
5.35.1	The Permittee is prohibited from increasing emissions of pollutants from EQUI 113 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. The Permittee shall vent emissions from EQUI 113 control equipment meeting the permit requirements of TREA 52. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.35.2	The Permittee shall vent emissions from EQUI 113 to a stack/vent meeting the requirements of STRU 57 whenever EQUI 113 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 114	**Tool room 2 Abrasive Blasting**
5.36.1	The Permittee is prohibited from increasing emissions of pollutants from EQUI 114 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. The Permittee shall vent emissions from EQUI 114 control equipment meeting the permit requirements of TREA 53. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.36.2	The Permittee shall vent emissions from EQUI 114 to a stack/vent meeting the requirements of STRU 57 whenever EQUI 114 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 115	**DC Abrasive Blasting**
5.37.1	The Permittee is prohibited from increasing emissions of pollutants from EQUI 115 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. The Permittee shall vent emissions from EQUI 115 control equipment meeting the permit requirements of TREA 54. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.37.2	The Permittee shall vent emissions from EQUI 115 to a stack/vent meeting the requirements of STRUs 43 and 50 whenever EQUI 115 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 116	**Battery Terminal Post Coater 30**
5.38.1	The Permittee shall vent emissions from EQUI 116 to a stack/vent meeting the requirements of STRU 50 whenever EQUI 116 operates. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.38.2	At the time of permit issuance, EQUI 116 is a water-based dip coater as described in Appendix B of this permit and shall comply with requirements under COMG 1. EQUI 116 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

Commented [A117]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.38.3	The Permittee shall apply water-based coating from EQUI 116 using dip or drip application methods only unless it is modified as authorized elsewhere in this permit. Spray application of coating while venting emissions to STRU 50 is prohibited. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 117	**South Building R&D Coater**
5.39.1	The Permittee shall vent emissions from EQUI 117 to a stack/vent meeting the requirements of STRU 35 whenever EQUI 117 operates. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.39.2	At the time of permit issuance, EQUI 117 is a UV spray coater as described in Appendix B of this permit and shall comply with requirements under COMG 1. EQUI 117 shall comply with the requirements under COMG 2 except for having to comply with operating under the following conditions: 1) operate with control equipment meeting the requirements in COMG 14; and 2) operate in a coating room meeting the requirements of COMG 5. EQUI 117 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.39.3	The Permittee is prohibited from using any coating that contains any hazardous air pollutant (HAP), including the target HAPs as defined under 40 CFR Section 63.11180. [Minn. R. 7007.0800, subps. 2(A)]
5.39.4	Daily Recordkeeping. On each day of operation, the Permittee shall calculate, record, and maintain a record of the total quantity of each coating and other solids-containing material, including the solids content of each coating (as a mass fraction), used by EQUI 117 and the time of the day when EQUI 117 was in operation. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.39.5	Particulate Matter: Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate, record, and maintain a record of the following for the previous operating day using the daily usage records: 1) Total weight of UV coating used by EQUI 117, in pounds/day; and 2) Daily average hourly emissions of PM10 and PM2.5 from EQUI 117 as determined elsewhere in this permit, in pounds/hour. This record shall also include solids contents of each material as determined by the Material Content requirement of this permit. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.39.6	PM < 10 micron: The Permittee shall calculate PM10 emissions from EQUI 117 using the following equations: EQUI117PM10 = F x G where: EQUI117PM10 = daily average PM10 emissions from EQUI 117, in pounds/hour; F = total weight of coating used in EQUI 117 based on daily usage logs, in pounds/day; and G = uncontrolled PM10 emission factor, in pounds PM10 per pound of coating, listed in Appendix B, as a fraction. Other uncontrolled emission factors allowed by this permit shall be based on the most

Requirement number	Requirement and citation
	recent MPCA-approved stack test results performed according to approved replicable methodology (ARM) requirements. [Minn. R. 7007.0800, subps. 4-5]
5.39.7	PM < 2.5 micron: PM < 2.5 micron: Daily Calculations. The Permittee shall calculate PM2.5 emissions from EQUI 117 using the following equations: EQUI117PM2.5 = F x H where: EQUI117PM2.5 = daily average PM2.5 emissions from EQUI 117, in pounds/hour; F = total weight of coating used in EQUI 117 based on daily usage logs, in pounds/day; and G = uncontrolled PM2.5 emission factor, in pounds PM2.5 per pound of coating, listed in Appendix B, as a fraction. Other uncontrolled emission factors allowed by this permit shall be based on the most recent MPCA-approved stack test results performed according to approved replicable methodology (ARM) requirements. [Minn. R. 7007.0800, subps. 4-5]
5.39.8	Maximum Contents of Materials and Process Rate: The Permittee assumed certain worst-case contents of materials and process rates when determining the short term potential to emit of EQUI 117. These assumptions are listed in Appendix B of this permit. Increasing the process rate or changing to a material that has a higher content of any of the given pollutants, or an addition of a pollutant not listed in Appendix B, is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150. [Minn. R. 7005.0100, subps. 35a]
5.39.9	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.39.10	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
5.39.11	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.39.12	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1.

Commented [A118]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A119]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Requirement number	Requirement and citation
	The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.39.13	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
5.39.14	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.39.15	The Permittee must limit the daily operation of EQUI 117 to the period between 5 am and 11 pm. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 120	**Emergency Generator Engine**
5.40.1	The Permittee shall vent emissions from EQUI 120 to a stack/vent meeting the requirements of STRU 4 whenever EQUI 120 operates. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.40.2	The Permittee must limit emissions of NMHC+NOx <= 4.7 grams per kilowatt-hour. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305]
5.40.3	The Permittee must limit emissions of Particulate Matter <= 0.40 grams per kilowatt-hour. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305]
5.40.4	The Permittee must limit emissions of Carbon Monoxide <= 5.0 grams per kilowatt-hour. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), Minn. R. 7011.2305]
5.40.5	The Permittee must limit emissions of Opacity <= 20 percent opacity during the acceleration mode. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305]
5.40.6	The Permittee must limit emissions of Opacity <= 15 percent opacity during the lugging mode. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305]
5.40.7	The Permittee must limit emissions of Opacity <= 50 percent opacity during the peaks in either the acceleration or lugging modes. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305]
5.40.8	The Permittee must limit Sulfur Content of Fuel <= 15.0 parts per million and either a minimum cetane index of 40 or a maximum aromatic content of 35 percent by volume, as required by 40 CFR Section 80.510(b). [40 CFR 60.4207(b), 40 CFR 63.6590(c), Minn. R. 7011.2305]
5.40.9	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input. The potential to emit from the unit is 0.00044 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.2300, subp. 2(B)]
5.40.10	Opacity <= 20 percent opacity once operating temperatures have been attained. [Minn. R. 7011.2300, subp. 1]
5.40.11	The Permittee shall limit Non-Emergency Operating Hours <= 100 hours per year. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.40.12	On each day of operation, the Permittee shall operate EQUI 120 between the hours of 1:00pm and 4:00pm for maintenance testing. [Minn. R. 7007.0800, subp. 2(A)]

Requirement number	Requirement and citation
5.40.13	The Permittee shall keep records of fuel type and usage on a monthly basis. [Minn. R. 7007.0800, subp. 5]
5.40.14	Hours of Operation: The Permittee shall maintain documentation on site that the unit is an emergency generator by design that qualifies under the U.S. EPA memorandum entitled "Calculating Potential to Emit (PTE) for Emergency Generators" dated September 6, 1995, limiting operation to 500 hours per year. [Minn. R. 7007.0800, subps. 4-5]
5.40.15	Fuel type: No. 2 fuel oil/diesel fuel meeting the requirements of 40 CFR Section 1090.305 only by design. [40 CFR 60.4207(b), Minn. R. 7005.0100, subp. 35a]
5.40.16	Fuel Supplier Certification: The Permittee shall obtain and maintain a fuel supplier certification for each shipment of diesel fuel oil, certifying that the sulfur content does not exceed 0.0015 percent by weight. [Minn. R. 7007.0800, subps. 4-5]
5.40.17	The Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. IIII as follows: 40 CFR 60.4200(a)(2)(i); 40 CFR 60.4200(c); 40 CFR 60.4202(a)(2); 40 CFR 60.4205(b); 40 CFR 60.4207(b); 40 CFR 60.4208(a); 40 CFR 60.4209(a); 40 CFR 60.4211(a); 40 CFR 60.4211(c); 40 CFR 60.4211(f); 40 CFR 60.4214(b); 40 CFR 60.4218; 40 CFR 60.4219; and 40 CFR pt. 60, subp. IIII, Table 8. A copy of 40 CFR pt. 60, subp. IIII is included in Appendix J. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than 3 years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 60, subp. IIII, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.2305]
5.40.18	The Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. A as follows: 40 CFR 60.1(a); 40 CFR 60.1(b); 40 CFR 60.1(c); 40 CFR 60.2; 40 CFR 60.3; 40 CFR 60.4; 40 CFR 60.5(a); 40 CFR 60.5(b); 40 CFR 60.6(a); 40 CFR 60.6(b); 40 CFR 60.7(a)(1); 40 CFR 60.7(a)(3); 40 CFR 60.7(a)(4); 40 CFR 60.7(a)(5); 40 CFR 60.7(a)(6); 40 CFR 60.7(a)(7); 40 CFR 60.7(b); 40 CFR 60.7(c); 40 CFR 60.7(d); 40 CFR 60.8(a); 40 CFR 60.8(b); 40 CFR 60.8(c); 40 CFR 60.8(d); 40 CFR 60.8~~(e)~~©; 40 CFR 60.8(f); 40 CFR 60.8(g); 40 CFR 60.8(h); 40 CFR 60.8(i); 40 CFR 60.9; 40 CFR 60.11(a); 40 CFR 60.11(b); 40 CFR 60.11(c); 40 CFR 60.11(d); 40 CFR 60.11(e)(1); 40 CFR 60.11(e)(2); 40 CFR 60.11(e)(3); 40 CFR 60.11(e)(4); 40 CFR 60.11(e)(5); 40 CFR 60.11(e)(6); 40 CFR 60.11(e)(7); 40 CFR 60.11(e)(8); 40 CFR 60.11(f); 40 CFR 60.11(g); 40 CFR 60.12; 40 CFR 60.13(a); 40 CFR 60.13(b); 40 CFR 60.13(c); 40 CFR 60.13(d)(1); 40 CFR 60.13(d)(2); 40 CFR 60.13(e)(1); 40 CFR 60.13(e)(2); 40 CFR 60.13(f); 40 CFR 60.13(g); 40 CFR 60.13(h)(1); 40 CFR 60.13(h)(2); 40 CFR 60.13(h)(3); 40 CFR 60.13(i)(1); 40 CFR 60.13(i)(2); 40 CFR 60.13(i)(3); 40 CFR 60.13(i)(4); 40 CFR 60.13(i)(5); 40 CFR 60.13(i)(6); 40 CFR 60.13(i)(7); 40 CFR 60.13(i)(8); 40 CFR 60.13(i)(9); 40 CFR 60.13(j)(1); 40 CFR 60.13(j)(2); 40 CFR 60.14(a); 40 CFR 60.14(b); 40 CFR 60.14(c); 40 CFR 60.14(e); 40 CFR 60.14(f); 40 CFR 60.14(g); 40 CFR 60.14(h); 40 CFR 60.14(i); 40 CFR 60.14(j); 40 CFR 60.14(k); 40 CFR 60.14(l); 40 CFR 60.15(a); 40 CFR 60.15(b); 40 CFR 60.15(c); 40 CFR 60.15(d); 40 CFR 60.15(e); 40 CFR 60.15(f); 40 CFR 60.15(g); 40 CFR 60.17; 40 CFR 60.18(b)-(f); 40 CFR 60.18(g)-(i); 40 CFR 60.19(a); 40 CFR 60.19(b); 40 CFR 60.19(c); 40 CFR 60.19(d); 40 CFR 60.19(e); 40 CFR 60.19(f)(1); 40 CFR 60.19(f)(2); 40 CFR 60.19(f)(3); and 40 CFR 60.19(f)(4). A copy of 40 CFR pt. 60, subp. A is included in Appendix K. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than 3 years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 60, subp. A, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.0050, Minn. R. 7017.1010 & 7017.2025, Minn. R. 7019.0100]
5.40.19	EQUI 120 is a new affected source as defined under 40 CFR pt. 63, subp. ZZZZ, and the facility is an area source as defined at 40 CFR Section 63.2. The Permittee shall meet the applicable requirements of 40 CFR

Requirement number	Requirement and citation
	pt. 63, subp. ZZZZ by meeting the requirements of 40 CFR pt. 60, subp. IIII. No further requirements of 40 CFR pt. 63, subp. ZZZZ apply to EQUI 120. [40 CFR 63.6590(c), Minn. R. 7011.8150]
EQUI 121	**Die Cast (DC09)**
5.41.1	The Permittee must limit Process Throughput <= 290.53 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.41.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 121, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 121 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.41.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 121 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.41.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 121 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.41.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI121PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI121FPM10 = (A x B x 0.05) / 24 Where: EQUI121PM10 = daily average PM10 stack emissions from EQUI 121, in pounds/hour; EQUI121FPM10 = daily average uncaptured PM10 emissions from EQUI 121, in pounds/hour; A = total weight of lead-containing material processed by EQUI 121 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 121 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.41.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI121PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI121FPM2.5 = (A x C x 0.05) / 24 Where: EQUI121PM2.5 = daily average PM2.5 stack emissions from EQUI 121, in pounds/hour; EQUI121FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 121, in pounds/hour;

Commented [A120]: Strike these sections. The throughput limit and recordkeeping data are sufficient to show compliance with the relevant PM and lead standards and the compliant modeling scenario. Daily emissions calculations are unnecessary and redundant. This comment applies to all die casting units.

Requirement number	Requirement and citation
	A = total weight of lead-containing material processed by EQUI 121 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 121 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.41.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI121L = D x E EQUI121FL = D x H x 0.05 Where: EQUI121L = total lead stack emissions from EQUI 121, in pounds/day; EQUI121FL = total uncaptured lead emissions from EQUI 121, in pounds/day; D = total weight of lead-containing material processed by EQUI 121 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 121 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 121 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.41.8	The Permittee shall vent captured emissions from EQUI 121 to control equipment meeting the requirements of TREA 25 and TREA 61 operated in-series, and COMG 12 whenever EQUI 121 operates. The emissions from EQUI 121 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.41.9	The Permittee shall vent captured emissions from EQUI 121 to a stack/vent meeting the requirements of STRU 15 whenever EQUI 121 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.41.10	Within 6 months of permit issuance, ~~T~~the Permittee shall vent uncaptured emissions from EQUI 121 to a stack/vent meeting the requirements of STRU 48 whenever EQUI 121 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.41.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.41.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.41.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the

Commented [A121]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A122]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A123]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
	new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.41.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.41.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.41.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.41.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.41.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.41.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 122	**Die Cast (DC12)**

Commented [A124]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A125]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.42.1	The Permittee must limit Process Throughput <= 872.10 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.42.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 122, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 122 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.42.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 122 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.42.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 122 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.42.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI122PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI122FPM10 = (A x B x 0.05) / 24 Where: EQUI122PM10 = daily average PM10 stack emissions from EQUI 122, in pounds/hour; EQUI122FPM10 = daily average uncaptured PM10 emissions from EQUI 122, in pounds/hour; A = total weight of lead-containing material processed by EQUI 122 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 122 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.42.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI122PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI122FPM2.5 = (A x C x 0.05) / 24 Where: EQUI122PM2.5 = daily average PM2.5 stack emissions from EQUI 122, in pounds/hour; EQUI122FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 122, in pounds/hour; A = total weight of lead-containing material processed by EQUI 122 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 122 listed in Appendix D, as a fraction; and

Commented [A126]: Strike the daily calculation requirements in 5.42.3-5.42.7. The throughput limit and recordkeeping data are sufficient to show compliance with the relevant PM and lead standards and the compliant modeling scenario. Daily emissions calculations are unnecessary and redundant. This comment applies to all die casting units.

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.42.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI122L = D x E EQUI122FL = D x H x 0.05 Where: EQUI122L = total lead stack emissions from EQUI 122, in pounds/day; EQUI122FL = total uncaptured lead emissions from EQUI 122, in pounds/day; D = total weight of lead-containing material processed by EQUI 122 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 122 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 122 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.42.8	The Permittee shall vent captured emissions from EQUI 122 to control equipment meeting the requirements of TREA 25 and TREA 61 operated in-series, and COMG 12 whenever EQUI 122 operates. The emissions from EQUI 122 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.42.9	The Permittee shall vent captured emissions from EQUI 122 to a stack/vent meeting the requirements of STRU 15 whenever EQUI 122 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.42.10	Within 6 months of permit issuance, ~~T~~the Permittee shall vent uncaptured emissions from EQUI 122 to a stack/vent meeting the requirements of STRU 48 whenever EQUI 122 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.42.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.42.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.42.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A127]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A128]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A129]: Permittee needs an approvable test plan, not to submit a major amendment application.

Requirement number	Requirement and citation
5.42.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.42.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.42.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.42.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.42.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.42.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 123	**Die Cast (DC33)**

Commented [A130]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A131]: Permittee needs an approvable test plan, not to submit a major amendment application.

Commented [A132]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.43.1	The Permittee must limit Process Throughput <= 401.24 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.43.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 123, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 123 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.43.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 123 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.43.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 123 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.43.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI123PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI123FPM10 = (A x B x 0.05) / 24 Where: EQUI123PM10 = daily average PM10 stack emissions from EQUI 123, in pounds/hour; EQUI123FPM10 = daily average uncaptured PM10 emissions from EQUI 123, in pounds/hour; A = total weight of lead-containing material processed by EQUI 123 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 123 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.43.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI123PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI123FPM2.5 = (A x C x 0.05) / 24 Where: EQUI123PM2.5 = daily average PM2.5 stack emissions from EQUI 123, in pounds/hour; EQUI123FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 123, in pounds/hour; A = total weight of lead-containing material processed by EQUI 123 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 123 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.43.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI123L = D x E EQUI123FL = D x H x 0.05 Where: EQUI123L = total lead stack emissions from EQUI 123, in pounds/day; EQUI123FL = total uncaptured lead emissions from EQUI 123, in pounds/day; D = total weight of lead-containing material processed by EQUI 123 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 123 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 123 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.43.8	The Permittee shall vent captured emissions from EQUI 123 to control equipment meeting the requirements of TREA 25 and TREA 61 operated in-series, and COMG 12 whenever EQUI 123 operates. The emissions from EQUI 123 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.43.9	The Permittee shall vent captured emissions from EQUI 123 to a stack/vent meeting the requirements of STRU 15 whenever EQUI 123 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.43.10	Within 6 months of permit issuance, ~~T~~the Permittee shall vent uncaptured emissions from EQUI 123 to a stack/vent meeting the requirements of STRU 49 whenever EQUI 123 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.43.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.43.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.43.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A133]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A134]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A135]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.43.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.43.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.43.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.43.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.43.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.43.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 124	**Die Cast (DC14)**

Commented [A136]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A137]: Permittee needs an approvable test plan, not to submit a major permit application.

Commented [A138]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.44.1	The Permittee must limit Process Throughput <= 500.0~~0~~1 pounds per day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.44.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 124, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 124 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.44.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 124 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.44.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 124 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.44.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI124PM10 = [A x B x 0.95 x (~~-~~1 - CE1)] / 24 EQUI124FPM10 = (A x B x 0.05) / 24 Where: EQUI124PM10 = daily average PM10 stack emissions from EQUI 124, in pounds/hour; EQUI124FPM10 = daily average uncaptured PM10 emissions from EQUI 124, in pounds/hour; A = total weight of lead-containing material processed by EQUI 124 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 124 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.44.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI124PM2.5 = [A x C x 0.95 x (~~-~~1 - CE2)] / 24 EQUI124FPM2.5 = (A x C x 0.05) / 24 Where: EQUI124PM2.5 = daily average PM2.5 stack emissions from EQUI 124, in pounds/hour; EQUI124FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 124, in pounds/hour; A = total weight of lead-containing material processed by EQUI 124 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 124 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.44.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI124L = D x E EQUI124FL = D x H x 0.05 Where: EQUI124L = total lead stack emissions from EQUI 124, in pounds/day; EQUI124FL = total uncaptured lead emissions from EQUI 124, in pounds/day; D = total weight of lead-containing material processed by EQUI 124 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 124 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 124 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.44.8	The Permittee shall vent captured emissions from EQUI 124 to control equipment meeting the requirements of TREA 26 and TREA 63 operated in-series, and COMG 12 whenever EQUI 124 operates. The emissions from EQUI 124 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.44.9	The Permittee shall vent captured emissions from EQUI 124 to a stack/vent meeting the requirements of STRU 16 whenever EQUI 124 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.44.10	Within 6 months of permit issuance, ~~T~~the Permittee shall vent uncaptured emissions from EQUI 124 to a stack/vent meeting the requirements of STRU 43 whenever EQUI 124 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.44.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.44.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.44.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A139]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A140]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A141]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.44.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.44.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.44.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.44.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.44.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.44.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 125	**Die Cast (DC15)**

Commented [A142]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A143]: Permittee needs an approvable test plan, not to submit a major permit application.

Commented [A144]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.45.1	The Permittee must limit Process Throughput <= 233.75 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.45.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 125, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 125 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.45.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 125 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.45.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 125 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.45.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI125PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI125FPM10 = (A x B x 0.05) / 24 Where: EQUI125PM10 = daily average PM10 stack emissions from EQUI 125, in pounds/hour; EQUI125FPM10 = daily average uncaptured PM10 emissions from EQUI 125, in pounds/hour; A = total weight of lead-containing material processed by EQUI 125 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 125 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.45.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI125PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI125FPM2.5 = (A x C x 0.05) / 24 Where: EQUI125PM2.5 = daily average PM2.5 stack emissions from EQUI 125, in pounds/hour; EQUI125FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 125, in pounds/hour; A = total weight of lead-containing material processed by EQUI 125 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 125 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.45.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI125L = D x E EQUI125FL = D x H x 0.05 Where: EQUI125L = total lead stack emissions from EQUI 125, in pounds/day; EQUI125FL = total uncaptured lead emissions from EQUI 125, in pounds/day; D = total weight of lead-containing material processed by EQUI 125 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 125 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 125 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.45.8	The Permittee shall vent captured emissions from EQUI 125 to control equipment meeting the requirements of TREA 26 and TREA 63 operated in-series, and COMG 12 whenever EQUI 125 operates. The emissions from EQUI 125 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.45.9	The Permittee shall vent captured emissions from EQUI 125 to a stack/vent meeting the requirements of STRU 16 whenever EQUI 125 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.45.10	Within 6 months of permit issuance, ~~T~~the Permittee shall vent uncaptured emissions from EQUI 125 to a stack/vent meeting the requirements of STRU 50 whenever EQUI 125 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.45.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.45.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.45.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A145]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A146]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A147]: Permittee needs to submit an approvable test plan, not a major permit amendment application.

Requirement number	Requirement and citation
5.45.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.45.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.45.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.45.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.45.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.45.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 126	**Die Cast (DC21)**

Commented [A148]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A149]: Permittee needs to submit an approvable test plan, not a major permit amendment application.

Commented [A150]: Permittee needs to submit an approvable test plan, not a major permit amendment application.

Requirement number	Requirement and citation
5.46.1	The Permittee must limit Process Throughput <= 530.77 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.46.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 126, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 126 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.46.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 126 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.46.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 126 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.46.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI126PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI126FPM10 = (A x B x 0.05) / 24 Where: EQUI126PM10 = daily average PM10 stack emissions from EQUI 126, in pounds/hour; EQUI126FPM10 = daily average uncaptured PM10 emissions from EQUI 126, in pounds/hour; A = total weight of lead-containing material processed by EQUI 126 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 126 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.46.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI126PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI126FPM2.5 = (A x C x 0.05) / 24 Where: EQUI126PM2.5 = daily average PM2.5 stack emissions from EQUI 126, in pounds/hour; EQUI126FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 126, in pounds/hour; A = total weight of lead-containing material processed by EQUI 126 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 126 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.46.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI126L = D x E EQUI126FL = D x H x 0.05 Where: EQUI126L = total lead stack emissions from EQUI 126, in pounds/day; EQUI126FL = total uncaptured lead emissions from EQUI 126, in pounds/day; D = total weight of lead-containing material processed by EQUI 126 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 126 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 126 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.46.8	The Permittee shall vent captured emissions from EQUI 126 to control equipment meeting the requirements of TREA 26 and TREA 62 operated in-series, and COMG 12 whenever EQUI 126 operates. The emissions from EQUI 126 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.46.9	The Permittee shall vent captured emissions from EQUI 126 to a stack/vent meeting the requirements of STRU 16 whenever EQUI 126 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.46.10	Within 6 months of permit issuance, ~~T~~the Permittee shall vent uncaptured emissions from EQUI 126 to a stack/vent meeting the requirements of STRU 50 whenever EQUI 126 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.46.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.46.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.46.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A151]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A152]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A153]: Permittee needs to submit an approvable test plan, not a major permit amendment application.

Requirement number	Requirement and citation
5.46.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.46.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.46.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.46.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.46.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.46.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 127	**Die Cast (DC08)**

Commented [A154]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A155]: Permittee must submit an approvable test plan, not a major permit amendment application.

Commented [A156]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.47.1	The Permittee must limit Process Throughput <= 129.56 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.47.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 127, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 127 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.47.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 127 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.47.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 127 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.47.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI127PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI127FPM10 = (A x B x 0.05) / 24 Where: EQUI127PM10 = daily average PM10 stack emissions from EQUI 127, in pounds/hour; EQUI127FPM10 = daily average uncaptured PM10 emissions from EQUI 127, in pounds/hour; A = total weight of lead-containing material processed by EQUI 127 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 127 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.47.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI127PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI127FPM2.5 = (A x C x 0.05) / 24 Where: EQUI127PM2.5 = daily average PM2.5 stack emissions from EQUI 127, in pounds/hour; EQUI127FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 127, in pounds/hour; A = total weight of lead-containing material processed by EQUI 127 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 127 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.47.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI127L = D x E EQUI127FL = D x H x 0.05 Where: EQUI127L = total lead stack emissions from EQUI 127, in pounds/day; EQUI127FL = total uncaptured lead emissions from EQUI 127, in pounds/day; D = total weight of lead-containing material processed by EQUI 127 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 127 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 127 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.47.8	The Permittee shall vent captured emissions from EQUI 127 to control equipment meeting the requirements of TREA 27 and TREA 64 operated in-series, and COMG 12 whenever EQUI 127 operates. The emissions from EQUI 127 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.47.9	The Permittee shall vent captured emissions from EQUI 127 to a stack/vent meeting the requirements of STRU 17 whenever EQUI 127 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.47.10	Within 6 months of permit issuance, ~~T~~the Permittee shall vent uncaptured emissions from EQUI 127 to a stack/vent meeting the requirements of STRU 47 whenever EQUI 127 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.47.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.47.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.47.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A157]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A158]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A159]: Permittee must submit an approvable test plan, not a major permit amendment application.

Requirement number	Requirement and citation
5.47.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.47.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.47.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.47.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.47.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.47.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 128	**Die Cast (DC10)**

Commented [A160]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A161]: Permittee must submit an approvable test plan, not a major permit amendment application.

Commented [A162]: Permittee must submit an approvable test plan, not a major permit amendment application.

Requirement number	Requirement and citation
5.48.1	The Permittee must limit Process Throughput <= 399.71 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.48.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 128, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 128 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.48.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 128 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.48.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 128 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.48.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI128PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI128FPM10 = (A x B x 0.05) / 24 Where: EQUI128PM10 = daily average PM10 stack emissions from EQUI 128, in pounds/hour; EQUI128FPM10 = daily average uncaptured PM10 emissions from EQUI 128, in pounds/hour; A = total weight of lead-containing material processed by EQUI 128 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 128 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.48.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI128PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI128FPM2.5 = (A x C x 0.05) / 24 Where: EQUI128PM2.5 = daily average PM2.5 stack emissions from EQUI 128, in pounds/hour; EQUI128FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 128, in pounds/hour; A = total weight of lead-containing material processed by EQUI 128 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 128 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.48.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI128L = D x E EQUI128FL = D x H x 0.05 Where: EQUI128L = total lead stack emissions from EQUI 128, in pounds/day; EQUI128FL = total uncaptured lead emissions from EQUI 128, in pounds/day; D = total weight of lead-containing material processed by EQUI 128 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 128 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 128 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.48.8	The Permittee shall vent captured emissions from EQUI 128 to control equipment meeting the requirements of TREA 27 and TREA 64 operated in-series, and COMG 12 whenever EQUI 128 operates. The emissions from EQUI 128 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.48.9	The Permittee shall vent captured emissions from EQUI 128 to a stack/vent meeting the requirements of STRU 17 whenever EQUI 128 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.48.10	Within 6 months of permit issuance, ~~T~~the Permittee shall vent uncaptured emissions from EQUI 128 to a stack/vent meeting the requirements of STRU 47 whenever EQUI 128 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.48.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.48.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.48.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A163]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A164]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A165]: Permittee must submit an approvable test plan, not a major permit amendment application.

Requirement number	Requirement and citation
5.48.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.48.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.48.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.48.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.48.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.48.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 129	**Die Cast (DC17)**

Commented [A166]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A167]: Permittee must submit an approvable test plan, not a major permit amendment application.

Commented [A168]: Permittee must submit an approvable test plan, not a major permit amendment application.

Requirement number	Requirement and citation
5.49.1	The Permittee must limit Process Throughput <= 220.83 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.49.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 129, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 129 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.49.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 129 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.49.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 129 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.49.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI129PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI129FPM10 = (A x B x 0.05) / 24 Where: EQUI129PM10 = daily average PM10 stack emissions from EQUI 129, in pounds/hour; EQUI129FPM10 = daily average uncaptured PM10 emissions from EQUI 129, in pounds/hour; A = total weight of lead-containing material processed by EQUI 129 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 129 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.49.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI129PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI129FPM2.5 = (A x C x 0.05) / 24 Where: EQUI129PM2.5 = daily average PM2.5 stack emissions from EQUI 129, in pounds/hour; EQUI129FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 129, in pounds/hour; A = total weight of lead-containing material processed by EQUI 129 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 129 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.49.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI129L = D x E EQUI129FL = D x H x 0.05 Where: EQUI129L = total lead stack emissions from EQUI 129, in pounds/day; EQUI129FL = total uncaptured lead emissions from EQUI 129, in pounds/day; D = total weight of lead-containing material processed by EQUI 129 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 129 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 129 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.49.8	The Permittee shall vent captured emissions from EQUI 129 to control equipment meeting the requirements of TREA 27 and TREA 64 operated in-series, and COMG 12 whenever EQUI 129 operates. The emissions from EQUI 129 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.49.9	The Permittee shall vent captured emissions from EQUI 129 to a stack/vent meeting the requirements of STRU 17 whenever EQUI 129 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.49.10	Within 6 months of permit issuance, ~~T~~the Permittee shall vent uncaptured emissions from EQUI 129 to a stack/vent meeting the requirements of STRU 47 whenever EQUI 129 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.49.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.49.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.49.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A169]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A170]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A171]: Permittee must submit an approvable test plan, not a major permit amendment application.

Requirement number	Requirement and citation
5.49.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.49.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.49.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.49.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.49.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.49.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 130	**Die Cast (DC18)**

Commented [A172]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A173]: Permittee must submit an approvable test plan, not a major permit amendment application.

Commented [A174]: Permittee must submit an approvable test plan, not a major permit amendment application.

Requirement number	Requirement and citation
5.50.1	The Permittee must limit Process Throughput <= 204.30 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.50.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 130, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 130 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.50.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 130 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.50.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 130 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.50.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI130PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI130FPM10 = (A x B x 0.05) / 24 Where: EQUI130PM10 = daily average PM10 stack emissions from EQUI 130, in pounds/hour; EQUI130FPM10 = daily average uncaptured PM10 emissions from EQUI 130, in pounds/hour; A = total weight of lead-containing material processed by EQUI 130 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 130 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.50.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI130PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI130FPM2.5 = (A x C x 0.05) / 24 Where: EQUI130PM2.5 = daily average PM2.5 stack emissions from EQUI 130, in pounds/hour; EQUI130FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 130, in pounds/hour; A = total weight of lead-containing material processed by EQUI 130 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 130 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.50.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI130L = D x E EQUI130FL = D x H x 0.05 Where: EQUI130L = total lead stack emissions from EQUI 130, in pounds/day; EQUI130FL = total uncaptured lead emissions from EQUI 130, in pounds/day; D = total weight of lead-containing material processed by EQUI 130 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 130 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 130 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.50.8	The Permittee shall vent captured emissions from EQUI 130 to control equipment meeting the requirements of TREA 78 and TREA 65 operated in-series, and COMG 12 whenever EQUI 130 operates. The emissions from EQUI 130 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.50.9	The Permittee shall vent captured emissions from EQUI 130 to a stack/vent meeting the requirements of STRU 74 whenever EQUI 130 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.50.10	Within 6 months of permit issuance, ~~t~~The Permittee shall vent uncaptured emissions from EQUI 130 to a stack/vent meeting the requirements of STRU 44 whenever EQUI 130 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.50.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.50.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.50.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A175]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A176]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A177]: Permittee must submit an approvable test plan, not a major permit amendment application.

Requirement number	Requirement and citation
5.50.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.50.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.50.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.50.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.50.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.50.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 131	**Die Cast (DC36)**

Commented [A178]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A179]: Permittee must submit an approvable test plan, not a major permit amendment application.

Commented [A180]: Permittee must submit an approvable test plan, not a major permit amendment application.

Requirement number	Requirement and citation
5.51.1	The Permittee must limit Process Throughput <= 634.27 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.51.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 131, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 131 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.51.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 131 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.51.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 131 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.51.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI131PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI131FPM10 = (A x B x 0.05) / 24 Where: EQUI131PM10 = daily average PM10 stack emissions from EQUI 131, in pounds/hour; EQUI131FPM10 = daily average uncaptured PM10 emissions from EQUI 131, in pounds/hour; A = total weight of lead-containing material processed by EQUI 131 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 131 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.51.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI131PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI131FPM2.5 = (A x C x 0.05) / 24 Where: EQUI131PM2.5 = daily average PM2.5 stack emissions from EQUI 131, in pounds/hour; EQUI131FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 131, in pounds/hour; A = total weight of lead-containing material processed by EQUI 131 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 131 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.51.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI131L = D x E EQUI131FL = D x H x 0.05 Where: EQUI131L = total lead stack emissions from EQUI 131, in pounds/day; EQUI131FL = total uncaptured lead emissions from EQUI 131, in pounds/day; D = total weight of lead-containing material processed by EQUI 131 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 131 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 131 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.51.8	The Permittee shall vent captured emissions from EQUI 131 to control equipment meeting the requirements of TREA 78 and TREA 65 operated in-series, and COMG 12 whenever EQUI 131 operates. The emissions from EQUI 131 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.51.9	The Permittee shall vent captured emissions from EQUI 131 to a stack/vent meeting the requirements of STRU 74 whenever EQUI 131 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.51.10	Within 6 months of permit issuance, ~~t~~The Permittee shall vent uncaptured emissions from EQUI 131 to a stack/vent meeting the requirements of STRU 44 whenever EQUI 131 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.51.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.51.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.51.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A181]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A182]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A183]: Permittee must submit an approvable test plan, not a major permit amendment application.

Requirement number	Requirement and citation
5.51.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.51.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.51.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.51.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.51.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.51.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 132	**Die Cast (DC37)**

Commented [A184]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A185]: Permittee must submit an approvable test plan, not a major permit amendment application.

Requirement number	Requirement and citation
5.52.1	The Permittee must limit Process Throughput <= 552.50 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.52.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 132, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 132 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.52.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 132 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.52.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 132 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.52.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI132PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI132FPM10 = (A x B x 0.05) / 24 Where: EQUI132PM10 = daily average PM10 stack emissions from EQUI 132, in pounds/hour; EQUI132FPM10 = daily average uncaptured PM10 emissions from EQUI 132, in pounds/hour; A = total weight of lead-containing material processed by EQUI 132 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 132 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.52.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI132PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI132FPM2.5 = (A x C x 0.05) / 24 Where: EQUI132PM2.5 = daily average PM2.5 stack emissions from EQUI 132, in pounds/hour; EQUI132FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 132, in pounds/hour; A = total weight of lead-containing material processed by EQUI 132 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 132 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.52.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI132L = D x E EQUI132FL = D x H x 0.05 Where: EQUI132L = total lead stack emissions from EQUI 132, in pounds/day; EQUI132FL = total uncaptured lead emissions from EQUI 132, in pounds/day; D = total weight of lead-containing material processed by EQUI 132 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 132 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 132 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.52.8	The Permittee shall vent captured emissions from EQUI 132 to control equipment meeting the requirements of TREA 30 and TREA 66 operated in-series, and COMG 12 whenever EQUI 132 operates. The emissions from EQUI 132 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.52.9	The Permittee shall vent captured emissions from EQUI 132 to a stack/vent meeting the requirements of STRU 20 whenever EQUI 132 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.52.10	Within 6 months of permit issuance, ~~t~~The Permittee shall vent uncaptured emissions from EQUI 132 to a stack/vent meeting the requirements of STRU 44 whenever EQUI 132 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.52.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.52.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.52.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A186]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A187]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A188]: Permittee must submit an approvable test plan, not a major permit amendment application.

Requirement number	Requirement and citation
5.52.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.52.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.52.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.52.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.52.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.52.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 133	**Die Cast (DC25)**

Commented [A189]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A190]: Permittee must submit an approvable test plan, not a major permit amendment application.

Commented [A191]: Permittee must submit an approvable test plan, not a major permit amendment application.

Requirement number	Requirement and citation
5.53.1	The Permittee must limit Process Throughput <= 462.53 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.53.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 133, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 133 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.53.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 133 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.53.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 133 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.53.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI133PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI133FPM10 = (A x B x 0.05) / 24 Where: EQUI133PM10 = daily average PM10 stack emissions from EQUI 133, in pounds/hour; EQUI133FPM10 = daily average uncaptured PM10 emissions from EQUI 133, in pounds/hour; A = total weight of lead-containing material processed by EQUI 133 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 133 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.53.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI133PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI133FPM2.5 = (A x C x 0.05) / 24 Where: EQUI133PM2.5 = daily average PM2.5 stack emissions from EQUI 133, in pounds/hour; EQUI133FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 133, in pounds/hour; A = total weight of lead-containing material processed by EQUI 133 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 133 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.53.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI133L = D x E EQUI133FL = D x H x 0.05 Where: EQUI133L = total lead stack emissions from EQUI 133, in pounds/day; EQUI133FL = total uncaptured lead emissions from EQUI 133, in pounds/day; D = total weight of lead-containing material processed by EQUI 133 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 133 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 133 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.53.8	The Permittee shall vent captured emissions from EQUI 133 to control equipment meeting the requirements of TREA 30 and TREA 66 operated in-series, and COMG 12 whenever EQUI 133 operates. The emissions from EQUI 133 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.53.9	The Permittee shall vent captured emissions from EQUI 133 to a stack/vent meeting the requirements of STRU 20 whenever EQUI 133 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.53.10	Within 6 months of permit issuance, ~~t~~The Permittee shall vent uncaptured emissions from EQUI 133 to a stack/vent meeting the requirements of STRU 44 whenever EQUI 133 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.53.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.53.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.53.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A192]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A193]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A194]: Permittee must submit an approvable test plan, not a major permit amendment application.

Requirement number	Requirement and citation
5.53.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.53.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.53.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.53.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.53.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.53.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 134	**Die Cast (DC22)**

Commented [A195]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A196]: Permittee must submit an approvable test plan, not a major permit amendment application.

Commented [A197]: Permittee must submit an approvable test plan, not a major permit amendment application.

Requirement number	Requirement and citation
5.54.1	The Permittee must limit Process Throughput <= 452.85 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.54.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 134, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 134 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.54.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 134 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.54.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 134 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.54.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI134PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI134FPM10 = (A x B x 0.05) / 24 Where: EQUI134PM10 = daily average PM10 stack emissions from EQUI 134, in pounds/hour; EQUI134FPM10 = daily average uncaptured PM10 emissions from EQUI 134, in pounds/hour; A = total weight of lead-containing material processed by EQUI 134 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 134 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.54.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI134PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI134FPM2.5 = (A x C x 0.05) / 24 Where: EQUI134PM2.5 = daily average PM2.5 stack emissions from EQUI 134, in pounds/hour; EQUI134FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 134, in pounds/hour; A = total weight of lead-containing material processed by EQUI 134 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 134 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.54.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI134L = D x E EQUI134FL = D x H x 0.05 Where: EQUI134L = total lead stack emissions from EQUI 134, in pounds/day; EQUI134FL = total uncaptured lead emissions from EQUI 134, in pounds/day; D = total weight of lead-containing material processed by EQUI 134 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 134 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 134 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.54.8	The Permittee shall vent captured emissions from EQUI 134 to control equipment meeting the requirements of TREA 79 and TREA 67 operated in-series, and COMG 12 whenever EQUI 134 operates. The emissions from EQUI 134 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.54.9	The Permittee shall vent captured emissions from EQUI 134 to a stack/vent meeting the requirements of STRU 75 whenever EQUI 134 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.54.10	Within 6 months of permit issuance, ~~t~~The Permittee shall vent uncaptured emissions from EQUI 134 to a stack/vent meeting the requirements of STRU 44 whenever EQUI 134 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.54.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.54.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.54.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A198]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A199]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A200]: Permittee must submit an approvable test plan, not a major permit amendment application.

Requirement number	Requirement and citation
5.54.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.54.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.54.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.54.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.54.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.54.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 135	**Die Cast (DC35)**

Commented [A201]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A202]: Permittee must submit an approvable test plan, not a major permit amendment application.

Commented [A203]: Permittee must submit an approvable test plan, not a major permit amendment application.

Requirement number	Requirement and citation
5.55.1	The Permittee must limit Process Throughput <= 893.96 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.55.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 135, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 135 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.55.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 135 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.55.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 135 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.55.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI135PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI135FPM10 = (A x B x 0.05) / 24 Where: EQUI135PM10 = daily average PM10 stack emissions from EQUI 135, in pounds/hour; EQUI135FPM10 = daily average uncaptured PM10 emissions from EQUI 135, in pounds/hour; A = total weight of lead-containing material processed by EQUI 135 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 135 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.55.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI135PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI135FPM2.5 = (A x C x 0.05) / 24 Where: EQUI135PM2.5 = daily average PM2.5 stack emissions from EQUI 135, in pounds/hour; EQUI135FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 135, in pounds/hour; A = total weight of lead-containing material processed by EQUI 135 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 135 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.55.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI135L = D x E EQUI135FL = D x H x 0.05 Where: EQUI135L = total lead stack emissions from EQUI 135, in pounds/day; EQUI135FL = total uncaptured lead emissions from EQUI 135, in pounds/day; D = total weight of lead-containing material processed by EQUI 135 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 135 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 135 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.55.8	The Permittee shall vent captured emissions from EQUI 135 to control equipment meeting the requirements of TREA 79 and TREA 67 operated in-series, and COMG 12 whenever EQUI 135 operates. The emissions from EQUI 135 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.55.9	The Permittee shall vent captured emissions from EQUI 135 to a stack/vent meeting the requirements of STRU 75 whenever EQUI 135 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.55.10	Within 6 months of permit issuance, ~~t~~The Permittee shall vent uncaptured emissions from EQUI 135 to a stack/vent meeting the requirements of STRU 44 whenever EQUI 135 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.55.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.55.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.55.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A204]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A205]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A206]: Permittee must submit an approvable test plan, not a major permit amendment application.

Requirement number	Requirement and citation
5.55.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.55.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.55.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.55.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.55.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.55.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 136	**Die Cast (DC32)**

Commented [A207]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A208]: Permittee must submit an approvable test plan, not a major permit amendment application.

Commented [A209]: Permittee must submit an approvable test plan, not a major permit amendment application.

Requirement number	Requirement and citation
5.56.1	The Permittee must limit Process Throughput <= 893.96 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.56.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 136, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 136 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.56.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 136 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.56.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 136 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.56.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI136PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI136FPM10 = (A x B x 0.05) / 24 Where: EQUI136PM10 = daily average PM10 stack emissions from EQUI 136, in pounds/hour; EQUI136FPM10 = daily average uncaptured PM10 emissions from EQUI 136, in pounds/hour; A = total weight of lead-containing material processed by EQUI 136 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 136 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.56.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI136PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI136FPM2.5 = (A x C x 0.05) / 24 Where: EQUI136PM2.5 = daily average PM2.5 stack emissions from EQUI 136, in pounds/hour; EQUI136FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 136, in pounds/hour; A = total weight of lead-containing material processed by EQUI 136 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 136 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.56.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI136L = D x E EQUI136FL = D x H x 0.05 Where: EQUI136L = total lead stack emissions from EQUI 136, in pounds/day; EQUI136FL = total uncaptured lead emissions from EQUI 136, in pounds/day; D = total weight of lead-containing material processed by EQUI 136 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 136 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 136 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.56.8	The Permittee shall vent captured emissions from EQUI 136 to control equipment meeting the requirements of TREA 33 and TREA 68 operated in-series, and COMG 12 whenever EQUI 136 operates. The emissions from EQUI 136 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.56.9	The Permittee shall vent captured emissions from EQUI 136 to a stack/vent meeting the requirements of STRU 23 whenever EQUI 136 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.56.10	Within 6 months of permit issuance, ~~t~~The Permittee shall vent uncaptured emissions from EQUI 136 to a stack/vent meeting the requirements of STRU 44 whenever EQUI 136 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.56.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.56.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.56.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A210]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A211]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A212]: Permittee must submit an approvable test plan, not a major permit amendment application.

Requirement number	Requirement and citation
5.56.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.56.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.56.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.56.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.56.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.56.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 137	**Die Cast (DC26)**

Commented [A213]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A214]: Permittee must submit an approvable test plan, not a major permit amendment application.

Commented [A215]: Permittee must submit an approvable test plan, not a major permit amendment application.

Requirement number	Requirement and citation
5.57.1	The Permittee must limit Process Throughput <= 330.59 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.57.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 137, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 137 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.57.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 137 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.57.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 137 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.57.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI137PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI137FPM10 = (A x B x 0.05) / 24 Where: EQUI137PM10 = daily average PM10 stack emissions from EQUI 137, in pounds/hour; EQUI137FPM10 = daily average uncaptured PM10 emissions from EQUI 137, in pounds/hour; A = total weight of lead-containing material processed by EQUI 137 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 137 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.57.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI137PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI137FPM2.5 = (A x C x 0.05) / 24 Where: EQUI137PM2.5 = daily average PM2.5 stack emissions from EQUI 137, in pounds/hour; EQUI137FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 137, in pounds/hour; A = total weight of lead-containing material processed by EQUI 137 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 137 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.57.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI137L = D x E EQUI137FL = D x H x 0.05 Where: EQUI137L = total lead stack emissions from EQUI 137, in pounds/day; EQUI137FL = total uncaptured lead emissions from EQUI 137, in pounds/day; D = total weight of lead-containing material processed by EQUI 137 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 137 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 137 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.57.8	The Permittee shall vent captured emissions from EQUI 137 to control equipment meeting the requirements of TREA 34 and TREA 69 operated in-series, and COMG 12 whenever EQUI 137 operates. The emissions from EQUI 137 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.57.9	The Permittee shall vent captured emissions from EQUI 137 to a stack/vent meeting the requirements of STRU 24 whenever EQUI 137 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.57.10	Within 6 months of permit issuance, ~~t~~The Permittee shall vent uncaptured emissions from EQUI 137 to a stack/vent meeting the requirements of STRU 45 whenever EQUI 137 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.57.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.57.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.57.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A216]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A217]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A218]: Permittee must submit an approvable test plan, not a major permit amendment application.

Requirement number	Requirement and citation
5.57.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.57.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.57.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.57.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.57.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.57.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 138	**Die Cast (DC27)**

Commented [A219]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A220]: Permittee must submit an approvable test plan, not a major permit amendment application.

Commented [A221]: Permittee must submit an approvable test plan, not a major permit amendment application.

Requirement number	Requirement and citation
5.58.1	The Permittee must limit Process Throughput <= 555.28 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.58.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 138, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 138 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.58.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 138 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.58.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 138 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.58.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI138PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI138FPM10 = (A x B x 0.05) / 24 Where: EQUI138PM10 = daily average PM10 stack emissions from EQUI 138, in pounds/hour; EQUI138FPM10 = daily average uncaptured PM10 emissions from EQUI 138, in pounds/hour; A = total weight of lead-containing material processed by EQUI 138 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 138 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.58.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI138PM2.5 = [A x C x 0.95 x (1 - CE1)] / 24 EQUI138FPM2.5 = (A x C x 0.05) / 24 Where: EQUI138PM2.5 = daily average PM2.5 stack emissions from EQUI 138, in pounds/hour; EQUI138FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 138, in pounds/hour; A = total weight of lead-containing material processed by EQUI 138 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 138 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.58.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI138L = D x E EQUI138FL = D x H x 0.05 Where: EQUI138L = total lead stack emissions from EQUI 138, in pounds/day; EQUI138FL = total uncaptured lead emissions from EQUI 138, in pounds/day; D = total weight of lead-containing material processed by EQUI 138 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 138 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 138 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.58.8	The Permittee shall vent captured emissions from EQUI 138 to control equipment meeting the requirements of TREA 34 and TREA 69 operated in-series, and COMG 12 whenever EQUI 138 operates. The emissions from EQUI 138 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.58.9	The Permittee shall vent captured emissions from EQUI 138 to a stack/vent meeting the requirements of STRU 24 whenever EQUI 138 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.58.10	Within 6 months of permit issuance, ~~t~~The Permittee shall vent uncaptured emissions from EQUI 138 to a stack/vent meeting the requirements of STRU 45 whenever EQUI 138 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.58.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.58.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.58.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A222]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A223]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A224]: Permittee must submit an approvable test plan, not a major permit amendment application.

Requirement number	Requirement and citation
5.58.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.58.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.58.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.58.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.58.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.58.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 139	**Die Cast (DC16)**

Commented [A225]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A226]: Permittee must submit an approvable test plan, not a major permit amendment application.

Commented [A227]: Permittee must submit an approvable test plan, not a major permit amendment application.

Requirement number	Requirement and citation
5.59.1	The Permittee must limit Process Throughput <= 596.70 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.59.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 139, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 139 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.59.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 139 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.59.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 139 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.59.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI139PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI139FPM10 = (A x B x 0.05) / 24 Where: EQUI139PM10 = daily average PM10 stack emissions from EQUI 139, in pounds/hour; EQUI139FPM10 = daily average uncaptured PM10 emissions from EQUI 139, in pounds/hour; A = total weight of lead-containing material processed by EQUI 139 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 139 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.59.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI139PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI139FPM2.5 = (A x C x 0.05) / 24 Where: EQUI139PM2.5 = daily average PM2.5 stack emissions from EQUI 139, in pounds/hour; EQUI139FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 139, in pounds/hour; A = total weight of lead-containing material processed by EQUI 139 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 139 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.59.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI139L = D x E EQUI139FL = D x H x 0.05 Where: EQUI139L = total lead stack emissions from EQUI 139, in pounds/day; EQUI139FL = total uncaptured lead emissions from EQUI 139, in pounds/day; D = total weight of lead-containing material processed by EQUI 139 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 139 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 139 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.59.8	The Permittee shall vent captured emissions from EQUI 139 to control equipment meeting the requirements of TREA 35 and TREA 70 operated in-series, and COMG 12 whenever EQUI 139 operates. The emissions from EQUI 139 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.59.9	The Permittee shall vent captured emissions from EQUI 139 to a stack/vent meeting the requirements of STRU 25 whenever EQUI 139 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.59.10	Within 6 months of permit issuance, ~~t~~The Permittee shall vent uncaptured emissions from EQUI 139 to a stack/vent meeting the requirements of STRU 45 whenever EQUI 139 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.59.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.59.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.59.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A228]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A229]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A230]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.59.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.59.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.59.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.59.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.59.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.59.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 140	**Die Cast (DC28)**

Commented [A231]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A232]: Permittee needs an approvable test plan, not to submit a major permit application.

Commented [A233]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.60.1	The Permittee must limit Process Throughput <= 465.62 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.60.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 140, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 140 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.60.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 140 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.60.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 140 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.60.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI140PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI140FPM10 = (A x B x 0.05) / 24 Where: EQUI140PM10 = daily average PM10 stack emissions from EQUI 140, in pounds/hour; EQUI140FPM10 = daily average uncaptured PM10 emissions from EQUI 140, in pounds/hour; A = total weight of lead-containing material processed by EQUI 140 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 140 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.60.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI140PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI140FPM2.5 = (A x C x 0.05) / 24 Where: EQUI140PM2.5 = daily average PM2.5 stack emissions from EQUI 140, in pounds/hour; EQUI140FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 140, in pounds/hour; A = total weight of lead-containing material processed by EQUI 140 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 140 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.60.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI140L = D x E EQUI140FL = D x H x 0.05 Where: EQUI140L = total lead stack emissions from EQUI 140, in pounds/day; EQUI140FL = total uncaptured lead emissions from EQUI 140, in pounds/day; D = total weight of lead-containing material processed by EQUI 140 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 140 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 140 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.60.8	The Permittee shall vent captured emissions from EQUI 140 to control equipment meeting the requirements of TREA 35 and TREA 70 operated in-series, and COMG 12 whenever EQUI 140 operates. The emissions from EQUI 140 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.60.9	The Permittee shall vent captured emissions from EQUI 140 to a stack/vent meeting the requirements of STRU 25 whenever EQUI 140 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.60.10	Within 6 months of permit issuance, ~~T~~the Permittee shall vent uncaptured emissions from EQUI 140 to a stack/vent meeting the requirements of STRU 45 whenever EQUI 140 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.60.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.60.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.60.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A234]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A235]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A236]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.60.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.60.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.60.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.60.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.60.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.60.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 141	**Die Cast (DC29)**

Commented [A237]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A238]: Permittee needs an approvable test plan, not to submit a major permit application.

Commented [A239]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.61.1	The Permittee must limit Process Throughput <= 740.14 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.61.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 141, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 141 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.61.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 141 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.61.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 141 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.61.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI141PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI141FPM10 = (A x B x 0.05) / 24 Where: EQUI141PM10 = daily average PM10 stack emissions from EQUI 141, in pounds/hour; EQUI141FPM10 = daily average uncaptured PM10 emissions from EQUI 141, in pounds/hour; A = total weight of lead-containing material processed by EQUI 141 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 141 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.61.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI141PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI141FPM2.5 = (A x C x 0.05) / 24 Where: EQUI141PM2.5 = daily average PM2.5 stack emissions from EQUI 141, in pounds/hour; EQUI141FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 141, in pounds/hour; A = total weight of lead-containing material processed by EQUI 141 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 141 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.61.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI141L = D x E EQUI141FL = D x H x 0.05 Where: EQUI141L = total lead stack emissions from EQUI 141, in pounds/day; EQUI141FL = total uncaptured lead emissions from EQUI 141, in pounds/day; D = total weight of lead-containing material processed by EQUI 141 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 141 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 141 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.61.8	The Permittee shall vent captured emissions from EQUI 141 to control equipment meeting the requirements of TREA 36 and TREA 71 operated in-series, and COMG 12 whenever EQUI 141 operates. The emissions from EQUI 141 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.61.9	The Permittee shall vent captured emissions from EQUI 141 to a stack/vent meeting the requirements of STRU 26 whenever EQUI 141 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.61.10	Within 6 months of permit issuance, ~~t~~The Permittee shall vent uncaptured emissions from EQUI 141 to a stack/vent meeting the requirements of STRU 45 whenever EQUI 141 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.61.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.61.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.61.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A240]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A241]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A242]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.61.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.61.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.61.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.61.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.61.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.61.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 142	**Die Cast (DC19)**

Commented [A243]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A244]: Permittee needs an approvable test plan, not to submit a major permit application.

Commented [A245]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.62.1	The Permittee must limit Process Throughput <= 555.90 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.62.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 142, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 142 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.62.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 142 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.62.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 142 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.62.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI142PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI142FPM10 = (A x B x 0.05) / 24 Where: EQUI142PM10 = daily average PM10 stack emissions from EQUI 142, in pounds/hour; EQUI142FPM10 = daily average uncaptured PM10 emissions from EQUI 142, in pounds/hour; A = total weight of lead-containing material processed by EQUI 142 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 142 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.62.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI142PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI142FPM2.5 = (A x C x 0.05) / 24 Where: EQUI142PM2.5 = daily average PM2.5 stack emissions from EQUI 142, in pounds/hour; EQUI142FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 142, in pounds/hour; A = total weight of lead-containing material processed by EQUI 142 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 142 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.62.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI142L = D x E EQUI142FL = D x H x 0.05 Where: EQUI142L = total lead stack emissions from EQUI 142, in pounds/day; EQUI142FL = total uncaptured lead emissions from EQUI 142, in pounds/day; D = total weight of lead-containing material processed by EQUI 142 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 142 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 142 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.62.8	The Permittee shall vent captured emissions from EQUI 142 to control equipment meeting the requirements of TREA 36 and TREA 72 operated in-series, and COMG 12 whenever EQUI 142 operates. The emissions from EQUI 142 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.62.9	The Permittee shall vent captured emissions from EQUI 142 to a stack/vent meeting the requirements of STRU 26 whenever EQUI 142 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.62.10	Within 6 months of permit issuance, ~~t~~The Permittee shall vent uncaptured emissions from EQUI 142 to a stack/vent meeting the requirements of STRU 46 whenever EQUI 142 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.62.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.62.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.62.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A246]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A247]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A248]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.62.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.62.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.62.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.62.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.62.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.62.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 143	**Die Cast (DC34)**

Commented [A249]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A250]: Permittee needs an approvable test plan, not to submit a major permit application.

Commented [A251]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.63.1	The Permittee must limit Process Throughput <= 462.53 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.63.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 143, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 143 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.63.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 143 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.63.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 143 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.63.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI143PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI143FPM10 = (A x B x 0.05) / 24 Where: EQUI143PM10 = daily average PM10 stack emissions from EQUI 143, in pounds/hour; EQUI143FPM10 = daily average uncaptured PM10 emissions from EQUI 143, in pounds/hour; A = total weight of lead-containing material processed by EQUI 143 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 143 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.63.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI143PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI143FPM2.5 = (A x C x 0.05) / 24 Where: EQUI143PM2.5 = daily average PM2.5 stack emissions from EQUI 143, in pounds/hour; EQUI143FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 143, in pounds/hour; A = total weight of lead-containing material processed by EQUI 143 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 143 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.63.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI143L = D x E EQUI143FL = D x H x 0.05 Where: EQUI143L = total lead stack emissions from EQUI 143, in pounds/day; EQUI143FL = total uncaptured lead emissions from EQUI 143, in pounds/day; D = total weight of lead-containing material processed by EQUI 143 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 143 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 143 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.63.8	The Permittee shall vent captured emissions from EQUI 143 to control equipment meeting the requirements of TREA 36 and TREA 71 operated in-series, and COMG 12 whenever EQUI 143 operates. The emissions from EQUI 143 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.63.9	The Permittee shall vent captured emissions from EQUI 143 to a stack/vent meeting the requirements of STRU 26 whenever EQUI 143 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.63.10	Within 6 months of permit issuance, ~~t~~The Permittee shall vent uncaptured emissions from EQUI 143 to a stack/vent meeting the requirements of STRU 46 whenever EQUI 143 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.63.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.63.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.63.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A252]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A253]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A254]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.63.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.63.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.63.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.63.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.63.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.63.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 146	**Die Cast (DC42)**

Commented [A255]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A256]: Permittee needs an approvable test plan, not to submit a major permit application.

Commented [A257]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.64.1	The Permittee must limit Process Throughput <= 1199.66 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.64.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 146, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 146 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.64.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 146 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.64.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 146 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.64.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI146PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI146FPM10 = (A x B x 0.05) / 24 Where: EQUI146PM10 = daily average PM10 stack emissions from EQUI 146, in pounds/hour; EQUI146FPM10 = daily average uncaptured PM10 emissions from EQUI 146, in pounds/hour; A = total weight of lead-containing material processed by EQUI 146 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 146 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.64.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI146PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI146FPM2.5 = (A x C x 0.05) / 24 Where: EQUI146PM2.5 = daily average PM2.5 stack emissions from EQUI 146, in pounds/hour; EQUI146FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 146, in pounds/hour; A = total weight of lead-containing material processed by EQUI 146 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 146 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.64.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI146L = D x E EQUI146FL = D x H x 0.05 Where: EQUI146L = total lead stack emissions from EQUI 146, in pounds/day; EQUI146FL = total uncaptured lead emissions from EQUI 146, in pounds/day; D = total weight of lead-containing material processed by EQUI 146 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 146 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 146 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.64.8	The Permittee shall vent captured emissions from EQUI 146 to control equipment meeting the requirements of TREA 39 and TREA 73 operated in-series, and COMG 12 whenever EQUI 146 operates. The emissions from EQUI 146 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.64.9	The Permittee shall vent captured emissions from EQUI 146 to a stack/vent meeting the requirements of STRU 30 whenever EQUI 146 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.64.10	Within 6 months of permit issuance, ~~t~~The Permittee shall vent uncaptured emissions from EQUI 146 to a stack/vent meeting the requirements of STRU 53 whenever EQUI 146 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.64.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.64.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.64.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A258]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A259]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A260]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.64.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.64.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.64.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.64.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.64.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.64.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 147	**Die Cast (DC38)**

Commented [A261]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A262]: Permittee needs an approvable test plan, not to submit a major permit application.

Commented [A263]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.65.1	The Permittee must limit Process Throughput <= 1199.66 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.65.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 147, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 147 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.65.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 147 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.65.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 147 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.65.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI147PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI147FPM10 = (A x B x 0.05) / 24 Where: EQUI147PM10 = daily average PM10 stack emissions from EQUI 147, in pounds/hour; EQUI147FPM10 = daily average uncaptured PM10 emissions from EQUI 147, in pounds/hour; A = total weight of lead-containing material processed by EQUI 147 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 147 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.65.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI147PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI147FPM2.5 = (A x C x 0.05) / 24 Where: EQUI147PM2.5 = daily average PM2.5 stack emissions from EQUI 147, in pounds/hour; EQUI147FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 147, in pounds/hour; A = total weight of lead-containing material processed by EQUI 147 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 147 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.65.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI147L = D x E EQUI147FL = D x H x 0.05 Where: EQUI147L = total lead stack emissions from EQUI 147, in pounds/day; EQUI147FL = total uncaptured lead emissions from EQUI 147, in pounds/day; D = total weight of lead-containing material processed by EQUI 147 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 147 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 147 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.65.8	The Permittee shall vent captured emissions from EQUI 147 to control equipment meeting the requirements of TREA 40 and TREA 74 operated in-series, and COMG 12 whenever EQUI 147 operates. The emissions from EQUI 147 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.65.9	The Permittee shall vent captured emissions from EQUI 147 to a stack/vent meeting the requirements of STRU 31 whenever EQUI 147 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.65.10	Within 6 months of permit issuance, ~~t~~The Permittee shall vent uncaptured emissions from EQUI 147 to a stack/vent meeting the requirements of STRU 52 whenever EQUI 147 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.65.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.65.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.65.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A264]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A265]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A266]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.65.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.65.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.65.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.65.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.65.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.65.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 149	**Die Cast (DC40)**

Commented [A267]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A268]: Permittee needs an approvable test plan, not to submit a major permit application.

Commented [A269]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.66.1	The Permittee must limit Process Throughput <= 596.70 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.66.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 149, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 149 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.66.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 149 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.66.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 149 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.66.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI149PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI149FPM10 = (A x B x 0.05) / 24 Where: EQUI149PM10 = daily average PM10 stack emissions from EQUI 149, in pounds/hour; EQUI149FPM10 = daily average uncaptured PM10 emissions from EQUI 149, in pounds/hour; A = total weight of lead-containing material processed by EQUI 149 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 149 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.66.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI149PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI149FPM2.5 = (A x C x 0.05) / 24 Where: EQUI149PM2.5 = daily average PM2.5 stack emissions from EQUI 149, in pounds/hour; EQUI149FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 149, in pounds/hour; A = total weight of lead-containing material processed by EQUI 149 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 149 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.66.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI149L = D x E EQUI149FL = D x H x 0.05 Where: EQUI149L = total lead stack emissions from EQUI 149, in pounds/day; EQUI149FL = total uncaptured lead emissions from EQUI 149, in pounds/day; D = total weight of lead-containing material processed by EQUI 149 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 149 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 149 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.66.8	The Permittee shall vent captured emissions from EQUI 149 to control equipment meeting the requirements of TREA 41 and TREA 75 operated in-series, and COMG 12 whenever EQUI 149 operates. The emissions from EQUI 149 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.66.9	The Permittee shall vent captured emissions from EQUI 149 to a stack/vent meeting the requirements of STRU 32 whenever EQUI 149 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.66.10	Within 6 months of permit issuance, ~~t~~The Permittee shall vent uncaptured emissions from EQUI 149 to a stack/vent meeting the requirements of STRU 51 whenever EQUI 149 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.66.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.66.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.66.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A270]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A271]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A272]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.66.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.66.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.66.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.66.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.66.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.66.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 150	**Die Cast (DC48)**

Commented [A273]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A274]: Permittee needs an approvable test plan, not to submit a major permit application.

Commented [A275]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.67.1	The Permittee must limit Process Throughput <= 613.11 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.67.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 150, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 150 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.67.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 150 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.67.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 150 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.67.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI150PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI150FPM10 = (A x B x 0.05) / 24 Where: EQUI150PM10 = daily average PM10 stack emissions from EQUI 150, in pounds/hour; EQUI150FPM10 = daily average uncaptured PM10 emissions from EQUI 150, in pounds/hour; A = total weight of lead-containing material processed by EQUI 150 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 150 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.67.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI150PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI150FPM2.5 = (A x G x 0.05) / 24 Where: EQUI150PM2.5 = daily average PM2.5 stack emissions from EQUI 150, in pounds/hour; EQUI150FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 150, in pounds/hour; A = total weight of lead-containing material processed by EQUI 150 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 150 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.67.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI150L = D x E EQUI150FL = D x H x 0.05 Where: EQUI150L = total lead stack emissions from EQUI 150, in pounds/day; EQUI150FL = total uncaptured lead emissions from EQUI 150, in pounds/day; D = total weight of lead-containing material processed by EQUI 150 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 150 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 150 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.67.8	The Permittee shall vent captured emissions from EQUI 150 to control equipment meeting the requirements of TREA 41 and TREA 75 operated in-series, and COMG 12 whenever EQUI 150 operates. The emissions from EQUI 150 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.67.9	The Permittee shall vent captured emissions from EQUI 150 to a stack/vent meeting the requirements of STRU 32 whenever EQUI 150 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.67.10	Within 6 months of permit issuance, ~~t~~The Permittee shall vent uncaptured emissions from EQUI 150 to a stack/vent meeting the requirements of STRU 53 whenever EQUI 150 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.67.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.67.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.67.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A276]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A277]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A278]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.67.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.67.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.67.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.67.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.67.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.67.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 152	**Die Cast (DC41)**

Commented [A279]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A280]: Permittee needs an approvable test plan, not to submit a major permit application.

Commented [A281]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.68.1	The Permittee must limit Process Throughput <= 1305.27 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.68.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 152, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 152 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.68.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 152 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.68.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 152 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.68.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI152PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI152FPM10 = (A x B x 0.05) / 24 Where: EQUI152PM10 = daily average PM10 stack emissions from EQUI 152, in pounds/hour; EQUI152FPM10 = daily average uncaptured PM10 emissions from EQUI 152, in pounds/hour; A = total weight of lead-containing material processed by EQUI 152 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 152 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.68.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI152PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI152FPM2.5 = (A x C x 0.05) / 24 Where: EQUI152PM2.5 = daily average PM2.5 stack emissions from EQUI 152, in pounds/hour; EQUI152FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 152, in pounds/hour; A = total weight of lead-containing material processed by EQUI 152 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 152 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.68.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI152L = D x E EQUI152FL = D x H x 0.05 Where: EQUI152L = total daily lead stack emissions, in pounds/day; EQUI152FL = total daily uncaptured lead emissions, in pounds/day; D = total weight of lead-containing material processed by EQUI 152 for the previous operating day, in tons/day; E = controlled lead emission factor for EQUI 152 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 152 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.68.8	The Permittee shall vent captured emissions from EQUI 152 to control equipment meeting the requirements of TREA 42 and TREA 76 operated in-series, and COMG 12 whenever EQUI 152 operates. The emissions from EQUI 152 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.68.9	The Permittee shall vent captured emissions from EQUI 152 to a stack/vent meeting the requirements of STRU 33 whenever EQUI 152 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.68.10	Within 6 months of permit issuance, ~~t~~The Permittee shall vent uncaptured emissions from EQUI 152 to a stack/vent meeting the requirements of STRU 51 whenever EQUI 152 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.68.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.68.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.68.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A282]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A283]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A284]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.68.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.68.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.68.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.68.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.68.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.68.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 153	**Die Cast (DC44)**

Commented [A285]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A286]: Permittee needs an approvable test plan, not to submit a major permit application.

Commented [A287]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.69.1	The Permittee must limit Process Throughput <= 1179.85 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.69.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 153, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 153 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.69.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 153 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.69.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 153 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.69.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI153PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI153FPM10 = (A x B x 0.05) / 24 Where: EQUI153PM10 = daily average PM10 stack emissions from EQUI 153, in pounds/hour; EQUI153FPM10 = daily average uncaptured PM10 emissions from EQUI 153, in pounds/hour; A = total weight of lead-containing material processed by EQUI 153 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 153 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.69.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI153PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI153FPM2.5 = (A x C x 0.05) / 24 Where: EQUI153PM2.5 = daily average PM2.5 stack emissions from EQUI 153, in pounds/hour; EQUI153FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 153, in pounds/hour; A = total weight of lead-containing material processed by EQUI 153 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 153 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.69.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI153L = D x E EQUI153FL = D x H x 0.05 Where: EQUI153L = total lead stack emissions from EQUI 153, in pounds/day; EQUI153FL = total uncaptured lead emissions from EQUI 153, in pounds/day; D = total weight of lead-containing material processed by EQUI 153 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 153 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 153 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.69.8	The Permittee shall vent captured emissions from EQUI 153 to control equipment meeting the requirements of TREA 43 and TREA 77 operated in-series, and COMG 12 whenever EQUI 153 operates. The emissions from EQUI 153 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.69.9	The Permittee shall vent captured emissions from EQUI 153 to a stack/vent meeting the requirements of STRU 34 whenever EQUI 153 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.69.10	Within 6 months of permit issuance, ~~t~~The Permittee shall vent uncaptured emissions from EQUI 153 to a stack/vent meeting the requirements of STRU 56 whenever EQUI 153 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.69.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.69.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.69.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A288]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A289]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A290]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.69.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.69.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.69.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.69.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.69.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.69.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 154	**Die Cast (DC45)**

Commented [A291]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A292]: Permittee needs an approvable test plan, not to submit a major permit application.

Commented [A293]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.70.1	The Permittee must limit Process Throughput <= 1132.90 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.70.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 154, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 154 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.70.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 154 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.70.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 154 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.70.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI154PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI154FPM10 = (A x B x 0.05) / 24 Where: EQUI154PM10 = daily average PM10 stack emissions from EQUI 154, in pounds/hour; EQUI154FPM10 = daily average uncaptured PM10 emissions from EQUI 154, in pounds/hour; A = total weight of lead-containing material processed by EQUI 154 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 154 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.70.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI154PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI154FPM2.5 = (A x C x 0.05) / 24 Where: EQUI154PM2.5 = daily average PM2.5 stack emissions from EQUI 154, in pounds/hour; EQUI154FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 154, in pounds/hour; A = total weight of lead-containing material processed by EQUI 154 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 154 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.70.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI154L = D x E EQUI154FL = D x H x 0.05 Where: EQUI154L = total lead stack emissions from EQUI 154, in pounds/day; EQUI154FL = total uncaptured lead emissions from EQUI 154, in pounds/day; D = total weight of lead-containing material processed by EQUI 154 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 154 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 154 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.70.8	The Permittee shall vent captured emissions from EQUI 154 to control equipment meeting the requirements of TREA 43 and TREA 77 operated in-series, and COMG 12 whenever EQUI 154 operates. The emissions from EQUI 154 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.70.9	The Permittee shall vent captured emissions from EQUI 154 to a stack/vent meeting the requirements of STRU 34 whenever EQUI 154 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.70.10	Within 6 months of permit issuance, ~~t~~The Permittee shall vent uncaptured emissions from EQUI 154 to a stack/vent meeting the requirements of STRU 51 whenever EQUI 154 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.70.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.70.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.70.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A294]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A295]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A296]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.70.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.70.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.70.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.70.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.70.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.70.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 155	**Die Cast (DC52)**

Commented [A297]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A298]: Permittee needs an approvable test plan, not to submit a major permit application.

Commented [A299]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.71.1	The Permittee must limit Process Throughput <= 462.53 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.71.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 155, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 155 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.71.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 155 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.71.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 155 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.71.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI155PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI155FPM10 = (A x B x 0.05) / 24 Where: EQUI155PM10 = daily average PM10 stack emissions from EQUI 155, in pounds/hour; EQUI155FPM10 = daily average uncaptured PM10 emissions from EQUI 155, in pounds/hour; A = total weight of lead-containing material processed by EQUI 155 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 155 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.71.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI155PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI155FPM2.5 = (A x C x 0.05) / 24 Where: EQUI155PM2.5 = daily average PM2.5 stack emissions from EQUI 155, in pounds/hour; EQUI155FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 155, in pounds/hour; A = total weight of lead-containing material processed by EQUI 155 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 155 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.71.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI155L = D x E EQUI155FL = D x H x 0.05 Where: EQUI155L = total lead stack emissions from EQUI 155, in pounds/day; EQUI155FL = total uncaptured lead emissions from EQUI 155, in pounds/day; D = total weight of lead-containing material processed by EQUI 155 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 155 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 155 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.71.8	The Permittee shall vent captured emissions from EQUI 155 to control equipment meeting the requirements of TREA 36 and TREA 71 operated in-series, and COMG 12 whenever EQUI 155 operates. The emissions from EQUI 155 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.71.9	The Permittee shall vent captured emissions from EQUI 155 to a stack/vent meeting the requirements of STRU 26 whenever EQUI 155 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.71.10	Within 6 months of permit issuance, ~~t~~The Permittee shall vent uncaptured emissions from EQUI 155 to a stack/vent meeting the requirements of STRU 46 whenever EQUI 155 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.71.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.71.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.71.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A300]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A301]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A302]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.71.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.71.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.71.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.71.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.71.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.71.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 156	**Die Cast (DC50)**

Commented [A303]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A304]: Permittee needs an approvable test plan, not to submit a major permit application.

Commented [A305]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.72.1	The Permittee must limit Process Throughput <= 855.22 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.72.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 156, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 156 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.72.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 156 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.72.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 156 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.72.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI156PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI156FPM10 = (A x B x 0.05) / 24 Where: EQUI156PM10 = daily average PM10 stack emissions from EQUI 156, in pounds/hour; EQUI156FPM10 = daily average uncaptured PM10 emissions from EQUI 156, in pounds/hour; A = total weight of lead-containing material processed by EQUI 156 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 156 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.72.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI156PM2.5 = [A x C x 0.95 x (1 - CE1)] / 24 EQUI156FPM2.5 = (A x C x 0.05) / 24 Where: EQUI156PM2.5 = daily average PM2.5 stack emissions from EQUI 156, in pounds/hour; EQUI156FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 156, in pounds/hour; A = total weight of lead-containing material processed by EQUI 156 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 156 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.72.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI156L = D x E EQUI156FL = D x H x 0.05 Where: EQUI156L = total lead stack emissions from EQUI 156, in pounds/day; EQUI156FL = total uncaptured lead emissions from EQUI 156, in pounds/day; D = total weight of lead-containing material processed by EQUI 156 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 156 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 156 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.72.8	The Permittee shall vent captured emissions from EQUI 156 to control equipment meeting the requirements of TREA 42 and TREA 76 operated in-series, and COMG 12 whenever EQUI 156 operates. The emissions from EQUI 156 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.72.9	The Permittee shall vent captured emissions from EQUI 156 to a stack/vent meeting the requirements of STRU 33 whenever EQUI 156 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.72.10	Within 6 months of permit issuance, ~~t~~The Permittee shall vent uncaptured emissions from EQUI 156 to a stack/vent meeting the requirements of STRU 51 whenever EQUI 156 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.72.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.72.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.72.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A306]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A307]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A308]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.72.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.72.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.72.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.72.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.72.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.72.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 157	**Die Cast (DC51)**

Commented [A309]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A310]: Permittee needs an approvable test plan, not to submit a major permit application.

Commented [A311]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.73.1	The Permittee must limit Process Throughput <= 1305.27 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.73.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 157, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 157 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.73.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 157 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.73.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 157 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.73.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI157PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI157FPM10 = (A x B x 0.05) / 24 Where: EQUI157PM10 = daily average PM10 stack emissions from EQUI 157, in pounds/hour; EQUI157FPM10 = daily average uncaptured PM10 emissions from EQUI 157, in pounds/hour; A = total weight of lead-containing material processed by EQUI 157 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 157 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.73.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI157PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI157FPM2.5 = (A x C x 0.05) / 24 Where: EQUI157PM2.5 = daily average PM2.5 stack emissions from EQUI 157, in pounds/hour; EQUI157FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 157, in pounds/hour; A = total weight of lead-containing material processed by EQUI 157 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 157 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.73.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI157L = D x E EQUI157FL = D x H x 0.05 Where: EQUI157L = total daily lead stack emissions, in pounds/day; EQUI157FL = total daily uncaptured lead emissions, in pounds/day; D = total weight of lead-containing material processed by EQUI 157 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 157 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 157 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.73.8	The Permittee shall vent captured emissions from EQUI 157 to control equipment meeting the requirements of TREA 26 and TREA 62 operated in-series, and COMG 12 whenever EQUI 157 operates. The emissions from EQUI 157 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.73.9	The Permittee shall vent captured emissions from EQUI 157 to a stack/vent meeting the requirements of STRU 16 whenever EQUI 157 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.73.10	Within 6 months of permit issuance, ~~t~~The Permittee shall vent uncaptured emissions from EQUI 157 to a stack/vent meeting the requirements of STRU 56 whenever EQUI 157 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.73.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.73.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.73.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A312]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A313]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A314]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.73.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.73.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.73.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.73.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.73.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.73.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 158	**Die Cast (DC53)**

Commented [A315]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A316]: Permittee needs an approvable test plan, not to submit a major permit application.

Commented [A317]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.74.1	The Permittee must limit Process Throughput <= 1233.40 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.74.2	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 158, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 158 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.74.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 158 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.74.4	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 158 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.74.5	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI158PM10 = [A x B x 0.95 x (1 - CE1)] / 24 EQUI158FPM10 = (A x B x 0.05) / 24 Where: EQUI158PM10 = daily average PM10 stack emissions from EQUI 158, in pounds/hour; EQUI158FPM10 = daily average uncaptured PM10 emissions from EQUI 158, in pounds/hour; A = total weight of lead-containing material processed by EQUI 158 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 158 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.74.6	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI158PM2.5 = [A x C x 0.95 x (1 - CE2)] / 24 EQUI158FPM2.5 = (A x C x 0.05) / 24 Where: EQUI158PM2.5 = daily average PM2.5 stack emissions from EQUI 158, in pounds/hour; EQUI158FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 158, in pounds/hour; A = total weight of lead-containing material processed by EQUI 158 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 158 listed in Appendix D, as a fraction; and

Requirement number	Requirement and citation
	CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.74.7	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI158L = D x E EQUI158FL = D x H x 0.05 Where: EQUI158L = total lead stack emissions from EQUI 158, in pounds/day; EQUI158FL = total uncaptured lead emissions from EQUI 158, in pounds/day; D = total weight of lead-containing material processed by EQUI 158 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 158 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 158 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.74.8	The Permittee shall vent captured emissions from EQUI 158 to control equipment meeting the requirements of TREA 39 and TREA 73 operated in-series, and COMG 12 whenever EQUI 158 operates. The emissions from EQUI 158 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.74.9	The Permittee shall vent captured emissions from EQUI 158 to a stack/vent meeting the requirements of STRU 30 whenever EQUI 158 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.74.10	Within 6 months of permit issuance, ~~t~~The Permittee shall vent uncaptured emissions from EQUI 158 to a stack/vent meeting the requirements of STRU 52 whenever EQUI 158 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020- 7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.74.11	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.74.12	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.74.13	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Commented [A318]: The potential for supply chain issues and the magnitude of change may require a compliance schedule for vent reconstruction due to conditions outside of Water Gremlin's control.

Commented [A319]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A320]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.74.14	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.74.15	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.74.16	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.74.17	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.74.18	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.74.19	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 160	**Billet Saw**

Commented [A321]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A322]: Permittee needs an approvable test plan, not to submit a major permit application.

Commented [A323]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.75.1	The Permittee must limit Process Throughput <= 1000.0 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.75.2	The Permittee shall limit Process Throughput <= 24.0 pounds per hour 365-day rolling sum. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
5.75.3	Process Throughput and Hours of Operation: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 160, this shall be based on written usage logs; 2) daily average of the hourly process throughput for EQUI 160 for the previous operating day; 3) average of the hourly process throughput for EQUI 160 for the previous 365-day period by calculating the average of the daily hourly process throughput for the previous 365 days; and 4) the time of the day when the EQUI 160 was operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.75.4	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 160 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.75.5	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 160 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.75.6	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equation: EQUI160PM10 = (A x B) / 24 Where: EQUI160PM10 = daily average PM10 stack emissions from EQUI 160, in pounds/hour; A = total weight of lead-containing material or pure tin processed by EQUI 160 for the previous operating day, in pounds/day; and B = uncontrolled PM10 emission factor for EQUI 160 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.75.7	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equation: EQUI160PM2.5 = (A x C) / 24 Where: EQUI160PM2.5 = daily average PM2.5 stack emissions from EQUI 160, in pounds/hour; A = total weight of lead-containing material or pure tin processed by EQUI 160 for the previous operating day, in pounds/day; and

Requirement number	Requirement and citation
	C = uncontrolled PM2.5 emission factor for EQUI 160 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.75.8	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equation: EQUI160L = D x E Where: EQUI160L = total lead stack emissions from EQUI 160, in pounds/day; D = total weight of lead-containing material processed by EQUI 160 for the previous operating day, in pounds/day; and E = uncontrolled lead emission factor for EQUI 160 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.75.9	The Permittee shall vent emissions from EQUI 160 to a stack/vent meeting the requirements of STRU 35 whenever EQUI 160 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.75.10	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.75.11	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.75.12	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.75.13	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used~~.~~. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test.

Commented [A324]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A325]: Permittee needs an approvable test plan, not to submit a major permit application.

Commented [A326]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Requirement number	Requirement and citation
	The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.75.14	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.75.15	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.75.16	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.75.17	~~Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.75.18	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.75.19	The Permittee must limit the daily operation of EQUI 160 to the period between 5 am and 11 pm. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 166	**Coating Room Bulk Solvent Tank**
5.76.1	The Permittee shall operate EQUI 166 in a permanent total enclosure meeting the requirements of COMG 5. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.76.2	The Permittee shall operate EQUI 166 meeting the requirements of COMG 1. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 172	**Battery Terminal Post Coater 29**

Commented [A327]: Permittee needs an approvable test plan, not to submit a major permit application.

Commented [A328]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.77.1	The Permittee shall vent emissions from EQUI 172 to a stack/vent meeting the requirements of STRU 53 whenever EQUI 172 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.77.2	At the time of permit issuance, EQUI 172 is a water-based dip coater as described in Appendix B of this permit and shall comply with requirements under COMG 1. EQUI 172 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.77.3	The Permittee shall apply water-based coating from EQUI 172 using dip or drip application methods only unless it is modified as authorized elsewhere in this permit. Spray application of coating while venting emissions to STRU 53 is prohibited. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 173	**Coating Room Soaker Tank**
5.78.1	The Permittee shall operate EQUI 173 in a permanent total enclosure meeting the requirements of COMG 5. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.78.2	The Permittee shall operate EQUI 173 meeting the requirements of COMG 1. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 174	**Solvent Distillation Unit**
5.79.1	The Permittee shall vent emissions from EQUI 174 to a stack/vent meeting the requirements of STRU 59 whenever EQUI 174 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.79.2	The Permittee shall operate EQUI 174 meeting the requirements of COMG 1. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.79.3	VOC Solvent Distiller Operation: The Permittee shall minimize fugitive VOC emissions and spills during filling, operation, emptying, and clean out of the VOC solvent distiller according to standard operating procedures, including the following: 1) Install a fill sensor or other fail-safe to prevent spilling of recycled VOC solvent during distillation; 2) Ensure that the operator of the distillation equipment remains in close proximity to the equipment while distillation is taking place; 3) Transfer recycled VOC solvent from distiller into containers that include secondary containment; and 4) Empty all distiller bottoms and other residue into a closed container and dispose as hazardous waste. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. ch. 7045, Minn. Stat. 116.385, subd. 3]
5.79.4	The Permittee may only distill dirty solvent that contains 1,2-(trans-) Dichloroethylene from the parts soaker tank (EQUI 173). [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.79.5	1,2-(trans-) Dichloroethylene Content of Distilled Material: The Permittee shall determine the specific content of 1,2-(trans-) Dichloroethylene in distilled material, in weight percent, following the analysis procedure and frequency requirements in Appendix B. Alternatively, the Permittee may analyze the distilled material for VOC and assume all of the VOC in distilled material is 1,2-(trans-) Dichloroethylene. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

Requirement number	Requirement and citation
EQUI 176	**VOC CEMS (STRU 73)**
5.80.1	~~1,2 (trans-) Dichloroethylene: Emissions Monitoring: The Permittee shall install, operate, and maintain a CEMS to measure 1,2 (trans-) Dichloroethylene emissions discharged to the atmosphere from STRU 73, and shall record the output of the system. [Minn. R. 7017.1006, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]~~
5.80.2	~~Certification Test Plan due 30 days before Certification Test.~~ ~~Certification Test Pretest Meeting due seven days before Certification Test.~~ ~~Certification Test Report due 45 days after Certification Test.~~ ~~The Test Plan and Test Report must be submitted in a format specified by the commissioner. [Minn. R. 7017.1060, subp. 1-3, Minn. R. 7017.1080]~~
5.80.3	~~Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment. [Minn. R. 7017.1090, Minn. Stat. 116.07, subd. 9(2)]~~
5.80.4	~~Monitoring Data: All data points collected by a CEMS shall be used to calculate individual hourly emission averages unless another applicable requirement requires more frequent averaging. Each hourly average starts at the beginning of the hour and ends at the beginning of the following hour.~~ ~~In order for an hour of data to be considered valid, it must contain the following minimum number of data points:~~ ~~A. four data points, equally spaced, if the emission unit operated during the entire hour;~~ ~~B. two data points, at least 15 minutes apart, during periods of monitor calibration or routine maintenance;~~ ~~C. one data point if the emission unit operated for 15 minutes or less during the hour.~~ ~~Monitoring data shall be recorded in the same units of measurement and averaging period as the facility's emission standard. [Minn. R. 7017.1160, Minn. Stat. 116.07, subd. 9(2)]~~
5.80.5	~~Certification Test Plan: The Permittee shall submit an approvable Certification Test Plan to the Commissioner that contains the following:~~ ~~1) Name and address of emission facility;~~ ~~2) Name, title, and telephone number of contact person at facility;~~ ~~3) Permit number or name and data of applicable compliance document requiring test;~~ ~~4) Statement of whether the test is an initial certification or a recertification;~~ ~~5) Drawing of the monitoring system which indicates the location of the reference method ports and monitoring system probe location in relation to the nearest flow disturbances both upstream and downstream of the monitoring system as well as any monitor bypass routes;~~ ~~6) Make, model, and serial number of the monitor and data recording system;~~ ~~7) Name and telephone number of testing company;~~ ~~8) Planned certification test date;~~ ~~9) List of the performance specifications from Code of Federal Regulations, title 40, part 60, appendix B, which will be followed during the test;~~ ~~10) List of the reference methods from Code of Federal Regulations, title 40, part 60, appendix A, which will be followed during the test;~~ ~~11) Units of measurement under which the monitor will be certified, for example, lb/hr, ppm, lb/MMBtu;~~ ~~12)~~1) ~~Monitoring system's span, range, and calibration levels; and~~

Commented [A329]: Delete the CEMS requirement. CEMS for STRU73 is not necessary nor useful. See comment letter for further information.

Requirement number	Requirement and citation
	~~13) Planned emission unit(s) operating range, for example, heat input, steam output, during the certification test. [Minn. R. 7017.1060, Minn. Stat. 116.07, subd. 9(2)]~~
5.80.6	~~QA Plan: Develop and implement a written quality assurance plan that covers each CEMS. The plan must be on site and available for inspection within 30 days after monitor certification. The plan must include the manufacturer's spare parts list for each CEMS and require that those parts be kept at the facility unless the Commissioner gives written approval to exclude specific spare parts from the list. [Minn. R. 7017.1170, subp. 2, Minn. Stat. 116.07, subd. 9(2)]~~
5.80.7	~~CEMS Daily Calibration Drift (CD) Test: The CD shall be quantified and recorded at zero (low level) and upscale (high level) gas concentrations at least once daily according to the procedures listed in Minn. R. 7017.1170, subp. 3(A) and (B), 40 CFR Section 60.13(d)(1) or 40 CFR pt. 75, Appendix B as applicable for each pollutant concentration, each diluent monitor, and for each monitor range. If no span value is specified in the applicable requirement or in a compliance document, the Permittee shall use a span value equivalent to 1.5 times the emission limit. [Minn. R. 7017.1170, subp. 3, Minn. Stat. 116.07, subd. 9(2)]~~
5.80.8	~~Relative Accuracy Test Audit (RATA) Notification: due 30 days before CEMS Relative Accuracy Test Audit (RATA). [Minn. R. 7017.1180, subp. 2, Minn. Stat. 116.07, subd. 9(2)]~~
5.80.9	~~CEMS Certification/Recertification Test: due 90 days after the first excess emissions report required for the CEMS or any change which invalidates the monitor's certification status as outlined in Minn. R. 7017.1050, subp. 2. [Minn. R. 7017.1050, subp. 1, Minn. Stat. 116.07, subd. 9(2)]~~
5.80.10	~~Recordkeeping: The owner or operator must retain records of all CEMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source. [Minn. R. 7017.1130, Minn. Stat. 116.07, subd.9(2)]~~
EQUI 219	**Battery Terminal Post Coater 33**
5.81.1	At the time of permit issuance, EQUI 219 is a UV spray coater as described in Appendix B of this permit and shall comply with the requirements under COMG 1, COMG 2, and COMG 5. EQUI 219 may be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & (B) , Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.81.2	The Permittee shall vent emissions from EQUI 219 to control equipment meeting the requirements of TREA 58 whenever EQUI 219 operates. [Minn. R. 7007.0800, subps. 2(A) & (B) , Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 220	**Battery Terminal Post Coater 34**
5.82.1	At the time of permit issuance, EQUI 220 is a UV spray coater as described in Appendix B of this permit and shall comply with the requirements under COMG 1, COMG 2, and COMG 5. EQUI 220 may be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.82.2	The Permittee shall vent emissions from EQUI 220 to control equipment meeting the requirements of TREA 59 whenever EQUI 220 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 221	**Tin Melt Pot**
5.83.1	The Permittee must limit Process Throughput <= 2500.0 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), ~~To~~ to avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

Requirement number	Requirement and citation
5.83.2	Process Throughput: Daily Recordkeeping. On each day of operation, the Permittee shall calculate, record, and maintain a record of the total weight of tin material processed by EQUI 221. This shall be based on written usage logs. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.83.3	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of pure tin processed by EQUI 221 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.83.4	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equation: EQUI221PM10 = [A x B x (1-CE1)] / 24 Where: EQUI221PM10 = daily average PM10 emissions from EQUI 221, in pounds/hour; A = total weight of pure tin processed by EQUI 221 for the previous operating day, in pounds/day; and B = uncontrolled PM10 emission factor for EQUI 221 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 11, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.83.5	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equation: EQUI221PM2.5 = [A x C x (1-CE2)] / 24 Where: EQUI221PM2.5 = daily average PM2.5 emissions from EQUI 221, in pounds/hour; A = total weight of pure tin processed by EQUI 221 for the previous operating day, in pounds/day; and C = uncontrolled PM2.5 emission factor for EQUI 221 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 11, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
5.83.6	The Permittee shall vent melt emissions from EQUI 221 to control equipment meeting the requirements of TREA 1 and TREA 60 operated in-series, and COMG 11 whenever EQUI 221 operates. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), t~~T~~o avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.83.7	The Permittee shall vent melt emissions from EQUI 221 to a stack/vent meeting the requirements of STRU 1 whenever EQUI 221 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.83.8	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead- containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-

Commented [A330]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Requirement number	Requirement and citation
	approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.83.9	~~PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.83.10	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.83.11	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.83.12	~~PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]~~
5.83.13	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 223	**Coining Booth 1**
5.84.1	The Permittee must limit the daily operation of EQUI 223 to the period between 5 am and 11 pm. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
5.84.2	Daily Recordkeeping. On each day of operation, the Permittee shall record the time of the day when EQUI 223 was in operation. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 224	**Coining Booth 2**
5.85.1	The Permittee must limit the daily operation of EQUI 224 to the period between 5 am and 11 pm. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]

Commented [A331]: Permittee needs an approvable test plan, not to submit a major permit application.

Commented [A332]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A333]: Permittee needs an approvable test plan, not to submit a major permit application.

Requirement number	Requirement and citation
5.85.2	Daily Recordkeeping. On each day of operation, the Permittee shall record the time of the day when EQUI 224 was in operation. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 225	**Coining Booth 3**
5.86.1	The Permittee must limit the daily operation of EQUI 225 to the period between 5 am and 11 pm. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
5.86.2	Daily Recordkeeping. On each day of operation, the Permittee shall record the time of the day when EQUI 225 was in operation. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 226	**Coining Booth 4**
5.87.1	The Permittee must limit the daily operation of EQUI 226 to the period between 5 am and 11 pm. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
5.87.2	Daily Recordkeeping. On each day of operation, the Permittee shall record the time of the day when EQUI 226 was in operation. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 227	**Coining Booth 5**
5.88.1	The Permittee must limit the daily operation of EQUI 227 to the period between 5 am and 11 pm. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
5.88.2	Daily Recordkeeping. On each day of operation, the Permittee shall record the time of the day when EQUI 227 was in operation. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 228	**Coining Booth 6**
5.89.1	The Permittee must limit the daily operation of EQUI 228 to the period between 5 am and 11 pm. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
5.89.2	Daily Recordkeeping. On each day of operation, the Permittee shall record the time of the day when EQUI 228 was in operation. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 229	**Coining Booth 7**
5.90.1	The Permittee must limit the daily operation of EQUI 229 to the period between 5 am and 11 pm. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
5.90.2	Daily Recordkeeping. On each day of operation, the Permittee shall record the time of the day when EQUI 229 was in operation. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 230	**Coining Booth 8**
5.91.1	The Permittee must limit the daily operation of EQUI 230 to the period between 5 am and 11 pm. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
5.91.2	Daily Recordkeeping. On each day of operation, the Permittee shall record the time of the day when EQUI 230 was in operation. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 231	**Coining Booth 9**
5.92.1	The Permittee must limit the daily operation of EQUI 231 to the period between 5 am and 11 pm. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
5.92.2	Daily Recordkeeping. On each day of operation, the Permittee shall record the time of the day when EQUI 231 was in operation. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]

Requirement number	Requirement and citation
EQUI 232	**Coining Booth 10**
5.93.1	The Permittee must limit the daily operation of EQUI 232 to the period between 5 am and 11 pm. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
5.93.2	Daily Recordkeeping. On each day of operation, the Permittee shall record the time of the day when EQUI 232 was in operation. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 233	**Battery Terminal Post Coater 19**
5.94.1	The Permittee shall vent emissions from EQUI 233 to a stack/vent meeting the requirements of STRU 50 whenever EQUI 233 operates. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.94.2	At the time of permit issuance, EQUI 233 is a water-based dip coater as described in Appendix B of this permit and shall comply with requirements under COMG 1. EQUI 233 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & (B) , Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.94.3	The Permittee shall apply water-based coating from EQUI 172 using dip or drip application methods only unless it is modified as authorized elsewhere in this permit. Spray application of coating while venting emissions to STRU 50 is prohibited. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 240	**Prototype Coater**
5.95.1	The Permittee shall vent emissions from EQUI 240 to a stack/vent meeting the requirements of STRU 72 whenever EQUI 240 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.95.2	At the time of permit issuance, EQUI 240 is a UV spray coater as described in Appendix B of this permit and shall comply with the requirements under COMG 1. EQUI 240 shall comply with the requirements under COMG 2 except for having to comply with the following: 1) operate with control equipment meeting the requirements in COMG 14; and 2) operate in a coating room meeting the requirements of COMG 5. EQUI 240 may be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.95.3	The Permittee is prohibited from using any coating that contains any hazardous air pollutant (HAP), including the target HAPs as defined under 40 CFR Section 63.11180. [Minn. R. 7007.0800, subps. 2(A)]
5.95.4	Daily Recordkeeping. On each day of operation, the Permittee shall calculate, record, and maintain a record of the total quantity of each coating and other solids-containing material, including the solids content of each coating (as a mass fraction), used by EQUI 240 and the time-of-day EQUI 240 was in operation. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.95.5	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate, record, and maintain a record of the following for the previous operating day using the daily usage records: 1) Total weight of UV coating used by EQUI 240, in pounds/day; and 2) Daily average hourly emissions of PM10 and PM2.5 from EQUI 240 as determined elsewhere in this

Requirement number	Requirement and citation
	permit, in pounds/hour. This record shall also include solids contents of each material as determined by the Material Content requirement of this permit. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.95.6	PM < 10 micron: Daily Calculations. The Permittee shall calculate PM10 emissions from EQUI 240 using the following equations: EQUI240PM10 = I x J where: EQUI240PM10 = daily average PM10 emissions from EQUI 240, in pounds/hour; F = total weight of coating used in EQUI 240 based on daily usage logs, in pounds/day; and G = uncontrolled PM10 emission factor, in pounds PM10 per pound of coating, listed in Appendix B, as a fraction. Other uncontrolled emission factors allowed by this permit shall be based on the most recent MPCA-approved stack test results performed according to approved replicable methodology (ARM) requirements. [Minn. R. 7007.0800, subps. 4-5]
5.95.7	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate PM2.5 emissions from EQUI 240 using the following equations: EQUI240PM2.5 = I x K where: EQUI240PM2.5 = daily average PM2.5 emissions from EQUI 240, in pounds/hour; F = total weight of coating used in EQUI 240 based on daily usage logs, in pounds/day; and G = uncontrolled PM2.5 emission factor, in pounds PM2.5 per pound of coating, listed in Appendix B, as a fraction. Other uncontrolled emission factors allowed by this permit shall be based on the most recent MPCA-approved stack test results performed according to approved replicable methodology (ARM) requirements. [Minn. R. 7007.0800, subps. 4-5]
5.95.8	Maximum Contents of Materials and Process Rate: The Permittee assumed certain worst-case contents of materials and process rates when determining the short-term potential to emit of EQUI 240. These assumptions are listed in Appendix B of this permit. Increasing the process rate or changing to a material that has a higher content of any of the given pollutants, or an addition of a pollutant not listed in Appendix B, is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150. [Minn. R. 7005.0100, subps. 35a]
5.95.9	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

Commented [A334]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Requirement number	Requirement and citation
5.95.10	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
5.95.11	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.95.12	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 5 or 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.95.13	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
5.95.14	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
5.95.15	The Permittee must limit the daily operation of EQUI 240 to the period between 5 am and 11 pm. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 1	**Smog Hog #15 Stack**
5.96.1	The Permittee shall limit emissions of PM < 10 micron <= 0.1012 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.96.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.1012 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.96.3	The Permittee shall limit emissions of Lead <= 0.00297 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.96.4	The Permittee shall limit emissions of Lead <= 1.0835 pounds per year 365-day rolling sum. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.96.5	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 1 for the previous operating day using the formulas specified in this permit; and

Commented [A335]: Allow Method 5 OR Method 201A. See previous comments on this issue.

Commented [A336]: Recordkeeping should be on EQUI level, not STRU level.

Requirement number	Requirement and citation
	2) The total daily average hourly PM2.5 emissions from STRU 1 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.96.6	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 1 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 1 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 1 for the previous 365-dayperiod using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.96.7	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 1 using the following equation: STRU1PM10 = EQUI101PM10 + EQUI102PM10 + EQUI103PM10 + EQUI104PM10 + EQUI221PM10 where: STRU1PM10 = total daily average PM10 emissions emitted through STRU 1 from EQUI 101, EQUI 102, EQUI 103, EQUI 104, and EQUI 221, in pounds/hour; EQUI101PM10 = total daily average PM10 stack emissions from EQUI 101, in pounds/hour; EQUI102PM10 = total daily average PM10 stack emissions from EQUI 102, in pounds/hour; EQUI103PM10 = total daily average PM10 stack emissions from EQUI 103, in pounds/hour; EQUI104PM10 = total daily average PM10 stack emissions from EQUI 104, in pounds/hour; and EQUI221PM10 = total daily average PM10 stack emissions from EQUI 221, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.96.8	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 1 using the following equation: STRU1PM2.5 = EQUI101PM2.5 + EQUI102PM2.5 + EQUI103PM2.5 + EQUI104PM2.5 + EQUI221PM2.5 where: STRU1PM2.5 = total daily average PM2.5 emissions emitted through STRU 1 from EQUI 101, EQUI 102, EQUI 103, EQUI 104, and EQUI 221, in pounds/hour; EQUI101PM2.5 = total daily average PM2.5 stack emissions from EQUI 101, in pounds/hour; EQUI102PM2.5 = total daily average PM2.5 stack emissions from EQUI 102, in pounds/hour; EQUI103PM2.5 = total daily average PM2.5 stack emissions from EQUI 103, in pounds/hour; EQUI104PM2.5 = total daily average PM2.5 stack emissions from EQUI 104, in pounds/hour; and EQUI221PM2.5 = total daily average PM2.5 stack emissions from EQUI 221, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.96.9	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 1 using the following equations: STRU1L = EQUI101L + EQUI102L + EQUI103L + EQUI 104L STRU1L3A = [(STRU1L2 + STRU1L3 + STRU1L4 +...+ STRU1L91 + STRU1L92 + STRU1L93) - STRU1L1] / 92 days where: STRU1L# = total daily lead emissions emitted through STRU 1 from EQUI 101, EQUI 102, EQUI 103,

Commented [A337]: Recordkeeping should be on EQUI level, not STRU level.

Requirement number	Requirement and citation
	and EQUI 104, in pounds/day; STRU1L3A = 92-day rolling average lead emissions emitted through STRU 1 from EQUI 101, EQUI 102, EQUI 103, and EQUI 104 for the previous 92-day period, in pounds/day; EQUI101L = total lead stack emissions from EQUI 101, in pounds/day; EQUI102L = total lead stack emissions from EQUI 102, in pounds/day; EQUI103L = total lead stack emissions from EQUI 103, in pounds/day; and EQUI104L = total lead stack emissions from EQUI 104, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.96.10	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 1 using the following equations: STRU1L = EQUI101L + EQUI102L + EQUI103L + EQUI104L STRU1L365S = (STRU1L2 + STRU1L3 + STRU1L4 +.... + STRU1L364+ STRU1L365+ STRU1L366) - STRU1L1 where: STRU1L# = daily lead emissions emitted through STRU 1 from EQUI 101, EQUI 102, EQUI 103, and EQUI 104, in pounds/day; STRU1L365S = 365-day rolling sum lead emissions emitted through STRU 1 from EQUI 101, EQUI 102, EQUI 103, and EQUI 104 for the previous 365-day period, in pounds/year; EQUI101L = total lead stack emissions from EQUI 101, in pounds/day; EQUI102L = total lead stack emissions from EQUI 102, in pounds/day; EQUI103L = total lead stack emissions from EQUI 103, in pounds/day; and EQUI104L = total lead stack emissions from EQUI 104, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.96.11	The Permittee is prohibited from releasing emissions of pollutants through STRU 1 from any emission units other than EQUI 101, EQUI 102, EQUI 103, EQUI 104, or EQUI 221 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 15	**Smog Hog #1 Stack**
5.97.1	The Permittee shall limit emissions of PM < 10 micron <= 0.03887 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.97.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.03887 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.97.3	The Permittee shall limit emissions of Lead <= 0.0230 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.97.4	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 15 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 15 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.97.5	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 15 the previous operating day using formulas specified in this

Commented [A338]: This provision is redundant to 5.96.9 and should be removed.

Requirement number	Requirement and citation
	permit; 2) The 92-day rolling average daily lead emissions from STRU 15 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 15 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.97.6	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 15 using the following equation: STRU15PM10 = EQUI121PM10 + EQUI122PM10 + EQUI123PM10 where: STRU15PM10 = total daily average PM10 emissions emitted through STRU 15 from EQUI 121, EQUI 122, and EQUI 123 , in pounds/hour; EQUI121PM10 = total daily average PM10 stack emissions from EQUI 121, in pounds/hour; EQUI122PM10 = total daily average PM10 stack emissions from EQUI 122, in pounds/hour; and EQUI123PM10 = total daily average PM10 stack emissions from EQUI 123, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.97.7	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 15 using the following equation: STRU15PM2.5 = EQUI121PM2.5 + EQUI122PM2.5 + EQUI123PM2.5 where: STRU15PM2.5 = total daily average PM2.5 emissions emitted through STRU 15 from EQUI 121, EQUI 122, and EQUI 123, in pounds/hour; EQUI121PM2.5 = total daily average PM2.5 stack emissions from EQUI 121, in pounds/hour; EQUI122PM2.5 = total daily average PM2.5 stack emissions from EQUI 122, in pounds/hour; and EQUI123PM2.5 = total daily average PM2.5 stack emissions from EQUI 123, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.97.8	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 15 using the following equations: STRU15L = EQUI121L + EQUI122L + EQUI123L STRU15L3A = [(STRU15L2 + STRU15L3 + STRU15L4 +...+ STRU15L91 + STRU15L92 + STRU15L93) - STRU15L1] / 92 days where: STRU15L# = total daily lead emissions emitted through STRU 15 from EQUI 121, EQUI 122, and EQUI 123, in pounds/day; STRU15L3A = 92-day rolling average lead emissions emitted through STRU 15 from EQUI 121, EQUI 122, and EQUI 123 for the previous 92-day period, in pounds/day; EQUI121L = total lead stack emissions from EQUI 121, in pounds/day; EQUI122L = total lead stack emissions from EQUI 122, in pounds/day; and EQUI123L = total lead stack emissions from EQUI 123, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.97.9	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 15 using the

Requirement number	Requirement and citation
	following equations: STRU15L = EQUI121L + EQUI122L + EQUI123L STRU15L365S = (STRU15L2 + STRU15L3 + STRU15L4 +. . . + STRU15L364+ STRU15L365+ STRU15L366) - STRU15L1 where: STRU15L# = daily lead emissions emitted through STRU 15 from EQUI 121, EQUI 122, and EQUI 123, in pounds/day; STRU15L365S = 365-day rolling sum lead emissions emitted through STRU 15 from EQUI 121, EQUI 122, and EQUI 123 for the previous 365-day period, in pounds/year; EQUI121L = total lead stack emissions from EQUI 121, in pounds/day; EQUI122L = total lead stack emissions from EQUI 122, in pounds/day; and EQUI123L = total lead stack emissions from EQUI 123, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.97.10	The Permittee is prohibited from releasing emissions of pollutants through STRU 15 from any emission units other than EQUI 121, EQUI 122, or EQUI 123 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp, 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 16	**Smog Hog #2 Stack**
5.98.1	The Permittee shall limit emissions of PM < 10 micron <= 0.06388 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.98.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.06388 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.98.3	The Permittee shall limit emissions of Lead <= 0.03778 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.98.4	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 16 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 16 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.98.5	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 16 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 16 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 16 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.98.6	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 16 using the following equation: STRU16PM10 = EQUI124PM10 + EQUI125PM10 + EQUI126PM10 + EQUI157PM10 where:

Requirement number	Requirement and citation
	STRU16PM10 = total daily average PM10 emissions emitted through STRU 16 from EQUI 124, EQUI 125, EQUI 126, and EQUI 157, in pounds/hour; EQUI124PM10 = total daily average PM10 stack emissions from EQUI 124, in pounds/hour; EQUI125PM10 = total daily average PM10 stack emissions from EQUI 125, in pounds/hour; EQUI126PM10 = total daily average PM10 stack emissions from EQUI 126, in pounds/hour; and EQUI157PM10 = total daily average PM10 stack emissions from EQUI 157, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.98.7	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 16 using the following equation: STRU16PM2.5 = EQUI124PM2.5 + EQUI125PM2.5 + EQUI126PM2.5 + EQUI157PM2.5 where: STRU16PM2.5 = total daily average PM2.5 emissions emitted through STRU 16 from EQUI 124, EQUI 125, EQUI 126, and EQUI 157, in pounds/hour; EQUI124PM2.5 = total daily average PM2.5 stack emissions from EQUI 124, in pounds/hour; EQUI125PM2.5 = total daily average PM2.5 stack emissions from EQUI 125, in pounds/hour; EQUI126PM2.5 = total daily average PM2.5 stack emissions from EQUI 126, in pounds/hour; and EQUI157PM2.5 = total daily average PM2.5 stack emissions from EQUI 157, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.98.8	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 16 using the following equations: STRU16L = EQUI124L + EQUI125L + EQUI126L + EQUI157L STRU16L3A = [(STRU16L2 + STRU16L3 + STRU16L4 +...+ STRU16L91 + STRU16L92 + STRU16L93) - STRU16L1] / 92 days where: STRU16L# = total daily lead emissions emitted through STRU 16 from EQUI 124, EQUI 125, EQUI 126, and EQUI 157, in pounds/day; STRU16L3A = 92-day rolling average lead emissions emitted through STRU 16 from EQUI 124, EQUI 125, EQUI 126, and EQUI 157 for the previous 92-day period, in pounds/day; EQUI124L = total lead stack emissions from EQUI 124, in pounds/day; EQUI125L = total lead stack emissions from EQUI 125, in pounds/day; EQUI126L = total lead stack emissions from EQUI 126, in pounds/day; and EQUI157L = total lead stack emissions from EQUI 157, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.98.9	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 16 using the following equations: STRU16L = EQUI124L + EQUI125L + EQUI126L + EQUI157L STRU16L365S = (STRU16L2 + STRU16L3 + STRU16L4 +.... + STRU16L364 + STRU16L365 + STRU16L366) - STRU16L1 where: STRU16L# = daily lead emissions emitted through STRU 16 from EQUI 124, EQUI 125, EQUI 126, and

Requirement number	Requirement and citation
	EQUI 157, in pounds/day; STRU16L365S = 365-day rolling sum lead emissions emitted through STRU 16 from EQUI 124, EQUI 125, EQUI 126, and EQUI 157 for the previous 365-day period, in pounds/year; EQUI124L = total lead stack emissions from EQUI 124, in pounds/day; EQUI125L = total lead stack emissions from EQUI 125, in pounds/day; EQUI126L = total lead stack emissions from EQUI 126, in pounds/day; and EQUI157L = total lead stack emissions from EQUI 157, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.98.10	The Permittee is prohibited from releasing emissions of pollutants through STRU 16 from any emission units other than EQUI 124, EQUI 125, EQUI 126, or EQUI 157 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp, 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 17	**Smog Hog #3 Stack**
5.99.1	The Permittee shall limit emissions of PM < 10 micron <= 0.01864 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.99.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.01864 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.99.3	The Permittee shall limit emissions of Lead <= 0.01103 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.99.4	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 17 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 17 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.99.5	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 17 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 17 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 17 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.99.6	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 17 using the following equation: STRU17PM10 = EQUI127PM10 + EQUI128PM10 + EQUI129PM10 where: STRU17PM10 = total daily average PM10 emissions emitted through STRU 17 from EQUI 127, EQUI 128, and EQUI 129, in pounds/hour; EQUI127PM10 = total daily average PM10 stack emissions from EQUI 127, in pounds/hour; EQUI128PM10 = total daily average PM10 stack emissions from EQUI 128, in pounds/hour; and

Requirement number	Requirement and citation
	EQUI129PM10 = total daily average PM10 stack emissions from EQUI 129, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.99.7	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 17 using the following equation: STRU17PM2.5 = EQUI127PM2.5 + EQUI128PM2.5 + EQUI129PM2.5 where: STRU17PM2.5 = total daily average PM2.5 emissions emitted through STRU 17 from EQUI 127, EQUI 128, and EQUI 129, in pounds/hour; EQUI127PM2.5 = total daily average PM2.5 stack emissions from EQUI 127, in pounds/hour; EQUI128PM2.5 = total daily average PM2.5 stack emissions from EQUI 128, in pounds/hour; and EQUI129PM2.5 = total daily average PM2.5 stack emissions from EQUI 129, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.99.8	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 17 using the following equations: STRU17L = EQUI127L + EQUI128L + EQUI129L STRU17L3A = [(STRU17L2 + STRU17L3 + STRU17L4 +...+ STRU17L91 + STRU17L92 + STRU17L93) - STRU17L1] / 92 days where: STRU17L# = total daily lead emissions emitted through STRU 17, in pounds /day; STRU17L3A = 92-day rolling average lead emissions emitted through STRU 17 for the previous 92-day period, in pounds/day; EQUI127L = total lead stack emissions from EQUI 127, in pounds/day; EQUI128L = total lead stack emissions from EQUI 128, in pounds/day; and EQUI129L = total lead stack emissions from EQUI 129, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.99.9	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 17 using the following equations: STRU17L = EQUI127L + EQUI128L + EQUI129L STRU17L365S = (STRU17L2 + STRU17L3 + STRU17L4 +.... + STRU17L364 + STRU17L365 + STRU17L366) - STRU17L1 where: STRU17L# = daily lead emissions emitted through STRU 17, in pounds/day; STRU17L365S = 365-day rolling sum lead emissions emitted through STRU 17 for the previous 365-day period, in pounds/year; EQUI127L = total lead stack emissions from EQUI 127, in pounds/day; EQUI128L = total lead stack emissions from EQUI 128, in pounds/day; and EQUI129L = total lead stack emissions from EQUI 129, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.99.10	The Permittee is prohibited from releasing emissions of pollutants through STRU 17 from any emission units other than EQUI 127, EQUI 128, or EQUI 129 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised

Requirement number	Requirement and citation
	dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 20	**Smog Hog #6 Stack**
5.100.1	The Permittee shall limit emissions of PM < 10 micron <= 0.02523 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.100.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.02523 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.100.3	The Permittee shall limit emissions of Lead <= 0.01492 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.100.4	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 20 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 20 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.100.5	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 20 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 20 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 20 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.100.6	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 20 using the following equation: STRU20PM10 = EQUI132PM10 + EQUI133PM10 where: STRU20PM10 = total daily average PM10 emissions emitted through STRU 20, in pounds/hour; EQUI132PM10 = total daily average PM10 stack emissions from EQUI 132, in pounds/hour; and EQUI133PM10 = total daily average PM10 stack emissions from EQUI 133, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.100.7	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 20 using the following equation: STRU20PM2.5 = EQUI132PM2.5 + EQUI133PM2.5 where: STRU20PM2.5 = total daily average PM2.5 emissions emitted through STRU 20, in pounds/hour; EQUI132PM2.5 = total daily average PM2.5 stack emissions from EQUI 132, in pounds/hour; and EQUI133PM2.5 = total daily average PM2.5 stack emissions from EQUI 133, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.100.8	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 20 using the

Requirement number	Requirement and citation
	following equations: STRU20L = EQUI132L + EQUI133L STRU20L3A = [(STRU20L2 + STRU20L3 + STRU20L4 +...+ STRU20L91 + STRU20L92 + STRU20L93) - STRU20L1] / 92 days where: STRU20L# = total daily lead emissions emitted through STRU 20, in pounds/day; STRU20L3A = 92-day rolling average lead emissions emitted through STRU 20 for the previous 92-day period, in pounds/day; EQUI132L = total lead stack emissions from EQUI 132, in pounds/day; and EQUI133L = total lead stack emissions from EQUI 133, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.100.9	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 20 using the following equations: STRU20L = EQUI132L + EQUI133L STRU20L365S = (STRU20L2 + STRU20L3 + STRU20L4 +.... + STRU20L364 + STRU20L365 + STRU20L366) - STRU20L1 where: STRU20L# = total daily lead emissions emitted through STRU 20, in pounds/day; STRU20L365S = 365-day rolling sum lead emissions emitted through STRU 21 for the previous 365-day period, in pounds/year; EQUI132L = total lead stack emissions from EQUI 132, in pounds/day; and EQUI133L = total lead stack emissions from EQUI 133, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.100.10	The Permittee is prohibited from releasing emissions of pollutants through STRU 20 from any emission units other than EQUI 132, or EQUI 133 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 23	**Smog Hog #9 Stack**
5.101.1	The Permittee shall limit emissions of PM < 10 micron <= 0.02222 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.101.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.02222 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.101.3	The Permittee shall limit emissions of Lead <= 0.01314 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.101.4	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 23 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 23 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

Commented [A339]: I think this should be STRU 20.

Requirement number	Requirement and citation
5.101.5	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 23 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 23 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 23 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.101.6	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 23 using the following equation: STRU23PM10 = EQUI136PM10 where: STRU23PM10 = total daily average PM10 emissions emitted through STRU 23, in pounds/hour; and EQUI136PM10 = total daily average PM10 stack emissions from EQUI 136, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.101.7	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 23 using the following equation: STRU23PM2.5 = EQUI136PM2.5 where: STRU23PM2.5 = total daily average PM2.5 emissions emitted through STRU 23, in pounds/hour; and EQUI136PM2.5 = total daily average PM2.5 stack emissions from EQUI 136, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.101.8	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 23 using the following equations: STRU23L = EQUI136L STRU23L3A = [(STRU23L2 + STRU23L3 + STRU23L4 +...+ STRU23L91 + STRU23L92 + STRU23L93) - STRU23L1] / 92 days where: STRU23L# = total daily lead emissions emitted through STRU 23, in pounds/day; STRU23L3A = 92-day rolling average lead emissions emitted through STRU 23 for the previous 92-day period, in pounds/day; and EQUI136L = total lead stack emissions from EQUI 136, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.101.9	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 23 using the following equations: STRU23L = EQUI136L STRU23L365S = (STRU23L2 + STRU23L3 + STRU23L4 +.... + STRU23L364 + STRU23L365 + STRU23L366) - STRU23L1 where:

Requirement number	Requirement and citation
	STRU23L# = total daily lead emissions emitted through STRU 23, in pounds/day; STRU23L365S = 365-day rolling average lead emissions emitted through STRU 23 for the previous 365-day period, in pounds/year; and EQUI136L = total lead stack emissions from EQUI 136, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.101.10	The Permittee is prohibited from releasing emissions of pollutants through STRU 23 from any emission units other than EQUI 136 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 24	**Smog Hog #10 Stack**
5.102.1	The Permittee shall limit emissions of PM < 10 micron <= 0.02202 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.102.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.02202 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.102.3	The Permittee shall limit emissions of Lead <= 0.01302 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.102.4	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 24 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 24 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.102.5	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 24 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 24 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 24 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.102.6	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 24 using the following equation: STRU24PM10 = EQUI137PM10 + EQUI138PM10 where: STRU24PM10 = total daily average PM10 emissions emitted through STRU 24, in pounds/hour; EQUI137PM10 = total daily average PM10 stack emissions from EQUI 137, in pounds/hour; and EQUI138PM10 = total daily average PM10 stack emissions from EQUI 138, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.102.7	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 24 using the following equation:

Requirement number	Requirement and citation
	STRU24PM2.5 = EQUI137PM2.5 + EQUI138PM2.5 where: STRU24PM2.5 = total daily average PM2.5 emissions emitted through STRU 24, in pounds/hour; EQUI137PM2.5 = total daily average PM2.5 stack emissions from EQUI 137, in pounds/hour; and EQUI138PM2.5 = total daily average PM2.5 stack emissions from EQUI 138, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.102.8	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 24 using the following equations: STRU24L = EQUI137L + EQUI138L STRU24L3A = [(STRU24L2 + STRU24L3 + STRU24L4 +...+ STRU24L91 + STRU24L92 + STRU24L93) - STRU24L1] / 92 days where: STRU24L# = total daily lead emissions emitted through STRU 24, in pounds/day; STRU24L3A = 92-day rolling average lead emissions emitted through STRU 24 for the previous 92-day period, in pounds/day; EQUI137L = total lead stack emissions from EQUI 137, in pounds/day; and EQUI138L = total lead stack emissions from EQUI 138, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.102.9	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 24 using the following equations: STRU24L = EQUI137L + EQUI138L STRU24L365S = (STRU24L2 + STRU24L3 + STRU24L4 +.... + STRU24L364 + STRU24L365 + STRU24L366) - STRU24L1 where: STRU24L# = total daily lead emissions emitted through STRU 24, in pounds/day; STRU24L365S = 365-day rolling sum lead emissions emitted through STRU 24 for the previous 365-day period, in pounds/year; EQUI137L = total lead stack emissions from EQUI 137, in pounds/day; and EQUI138L = total lead stack emissions from EQUI 138, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.102.10	The Permittee is prohibited from releasing emissions of pollutants through STRU 24 from any emission units other than EQUI 137 or EQUI 138 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 25	**Smog Hog #11 Stack**
5.103.1	The Permittee shall limit emissions of PM < 10 micron <= 0.02641 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

Requirement number	Requirement and citation
5.103.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.02641 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.103.3	The Permittee shall limit emissions of Lead <= 0.01562 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.103.4	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 25 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 25 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.103.5	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 25 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 25 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 25 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.103.6	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 25 using the following equation: STRU25PM10 = EQUI139PM10 + EQUI140PM10 where: STRU25PM10 = total daily average PM10 emissions emitted through STRU 25, in pounds/hour; EQUI139PM10 = total daily average PM10 stack emissions from EQUI 139, in pounds/hour; and EQUI140PM10 = total daily average PM10 stack emissions from EQUI 140, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.103.7	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 25 using the following equation: STRU25PM2.5 = EQUI139PM2.5 + EQUI140PM2.5 where: STRU25PM2.5 = total daily average PM2.5 emissions emitted through STRU 25, in pounds/hour; EQUI139PM2.5 = total daily average PM2.5 stack emissions from EQUI 139, in pounds/hour; and EQUI140PM2.5 = total daily average PM2.5 stack emissions from EQUI 140, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.103.8	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 25 using the following equations: STRU25L = EQUI139L + EQUI140L STRU25L3A = [(STRU25L2 + STRU25L3 + STRU25L4 +...+ STRU25L91 + STRU25L92 + STRU25L93) - STRU25L1] / 92 days where:

Requirement number	Requirement and citation
	STRU25L# = total daily lead emissions emitted through STRU 25, in pounds/day; STRU25L3A = 92-day rolling average lead emissions emitted through STRU 25 for the previous 92-day period, in pounds/day; EQUI139L = total lead stack emissions from EQUI 139, in pounds/day; and EQUI140L = total lead stack emissions from EQUI 140, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.103.9	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 25 using the following equations: STRU25L = EQUI139L + EQUI140L STRU25L365S = (STRU25L2 + STRU25L3 + STRU25L4 +.... + STRU25L364 + STRU25L365 + STRU25L366) - STRU25L1 where: STRU25L# = total daily lead emissions emitted through STRU 25, in pounds/day; STRU25L365S = 365-day rolling sum lead emissions emitted through STRU 25 for the previous 365-day period, in pounds/year; EQUI139L = total lead stack emissions from EQUI 139, in pounds/day; and EQUI140L = total lead stack emissions from EQUI 140, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.103.10	The Permittee is prohibited from releasing emissions of pollutants through STRU 25 from any emission units other than EQUI 139 or EQUI 140 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 26	**Smog Hog #12 Stack**
5.104.1	The Permittee shall limit emissions of PM < 10 micron <= 0.05521 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.104.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.05521 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.104.3	The Permittee shall limit emissions of Lead <= 0.03265 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.104.4	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 26 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 26 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.104.5	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 26 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 26 for the previous 92-day period using formulas specified in this permit; and

Requirement number	Requirement and citation
	3) The 365-day rolling sum annual lead emissions from STRU 26 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.104.6	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 26 using the following equation: STRU26PM10 = EQUI141PM10 + EQUI142PM10 + EQUI143PM10 + EQUI155PM10 where: STRU26PM10 = total daily average PM10 emissions emitted through STRU 26, in pounds/hour; EQUI141PM10 = total daily average PM10 stack emissions from EQUI 141, in pounds/hour; EQUI142PM10 = total daily average PM10 stack emissions from EQUI 142, in pounds/hour; EQUI143PM10 = total daily average PM10 stack emissions from EQUI 143, in pounds/hour; and EQUI155PM10 = total daily average PM10 stack emissions from EQUI 155, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.104.7	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 26 using the following equation: STRU26PM2.5 = EQUI141PM2.5 + EQUI142PM2.5 + EQUI143PM2.5 + EQUI155PM2.5 where: STRU26PM2.5 = total daily average PM2.5 emissions emitted through STRU 26, in pounds/hour; EQUI141PM2.5 = total daily average PM2.5 stack emissions from EQUI 141, in pounds/hour; EQUI142PM2.5 = total daily average PM2.5 stack emissions from EQUI 142, in pounds/hour; EQUI143PM2.5 = total daily average PM2.5 stack emissions from EQUI 143, in pounds/hour; and EQUI155PM2.5 = total daily average PM2.5 stack emissions from EQUI 155, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.104.8	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 26 using the following equations: STRU26L = EQUI141L + EQUI142L + EQUI143L + EQUI155L STRU26L3A = [(STRU26L2 + STRU26L3 + STRU26L4 +...+ STRU26L91 + STRU26L92 + STRU26L93) - STRU26L1] / 92 days where: STRU26L# = total daily lead emissions emitted through STRU 26, in pounds/day; STRU26L3A = 92-day rolling average lead emissions emitted through STRU 26 for the previous 92-day period, in pounds/day; EQUI141L = total lead stack emissions from EQUI 141, in pounds/day; EQUI142L = total lead stack emissions from EQUI 142, in pounds/day; EQUI143L = total lead stack emissions from EQUI 143, in pounds/day; and EQUI155L = total lead stack emissions from EQUI 155, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.104.9	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 26 using the following equations: STRU26L = EQUI141L + EQUI142L + EQUI143L + EQUI155L

Requirement number	Requirement and citation
	STRU26L365S = (STRU26L2 + STRU26L3 + STRU26L4 +.... + STRU26L364 + STRU26L365 + STRU26L366) - STRU26L1 where: STRU26L# = daily lead emissions emitted through STRU 26, in pounds/day; STRU26L365S = 365-day rolling sum lead emissions emitted through STRU 26 for the previous 365-day period, in pounds/year; EQUI141L = total lead stack emissions from EQUI 142, in pounds/day; EQUI142L = total lead stack emissions from EQUI 142, in pounds/day; EQUI143L = total lead stack emissions from EQUI 143, in pounds/day; and EQUI155L = total lead stack emissions from EQUI 155, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.104.10	The Permittee is prohibited from releasing emissions of pollutants through STRU 26 from any emission units other than EQUI 141, EQUI 142, EQUI 143, or EQUI 155 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 30	**Smog Hog #16 Stack**
5.105.1	The Permittee shall limit emissions of PM < 10 micron <= 0.06048 pounds per hour daily average. [Minn. R. 7007.0800, subps. (A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.105.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.06048 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.105.3	The Permittee shall limit emissions of Lead <= 0.03577 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.105.4	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 30 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 30 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.105.5	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 30 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 30 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 30 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.105.6	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 30 using the following equation: STRU30PM10 = EQUI146PM10 + EQUI158PM10 where:

Requirement number	Requirement and citation
	STRU30PM10 = total daily average PM10 emissions emitted through STRU 30, in pounds/hour; EQUI146PM10 = total daily average PM10 stack emissions from EQUI 146, in pounds/hour; and EQUI158PM10 = total daily average PM10 stack emissions from EQUI 158, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.105.7	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 30 using the following equation: STRU30PM2.5 = EQUI146PM2.5 + EQUI158PM2.5 where: STRU30PM2.5 = total daily average PM2.5 emissions emitted through STRU 30, in pounds/hour; EQUI146PM2.5 = total daily average PM2.5 stack emissions from EQUI 146, in pounds/hour; and EQUI158PM2.5 = total daily average PM2.5 stack emissions from EQUI 158, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.105.8	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 30 using the following equations: STRU30L = EQUI146L + EQUI158L STRU30L3A = [(STRU30L2 + STRU30L3 + STRU30L4 +...+ STRU30L91 + STRU30L92 + STRU30L93) - STRU30L1] / 92 days where: STRU30L# = total daily lead emissions emitted through STRU 30, in pounds/day; STRU30L3A = 92-day rolling average lead emissions emitted through STRU 30 for the previous 92-day period, in pounds/day; EQUI146L = total lead stack emissions from EQUI 146, in pounds/day; and EQUI158L = total lead stack emissions from EQUI 158, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.105.9	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 30 using the following equations: STRU30L = EQUI146L + EQUI158L STRU30L365S = (STRU30L2 + STRU30L3 + STRU30L4 +.... + STRU30L364 + STRU30L365 + STRU30L366) - STRU30L1 where: STRU30L# = total daily lead emissions emitted through STRU 30, in pounds/day; STRU30L365S = 365-day rolling sum lead emissions emitted through STRU 30 for the previous 365-day period, in pounds/year; EQUI146L = total lead stack emissions from EQUI 146, in pounds/day; and EQUI158L = total lead stack emissions from EQUI 158, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.105.10	The Permittee is prohibited from releasing emissions of pollutants through STRU 30 from any emission units other than EQUI 146 or EQUI 158 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

Requirement number	Requirement and citation
STRU 31	**Smog Hog #17 Stack**
5.106.1	The Permittee shall limit emissions of PM < 10 micron <= 0.02982 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.106.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.02982 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.106.3	The Permittee shall limit emissions of Lead <= 0.01764 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.106.4	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 31 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 31 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.106.5	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 31 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 31 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 31 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.106.6	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 31 using the following equation: STRU31PM10 = EQUI147PM10 where: STRU31PM10 = total daily average PM10 emissions emitted through STRU 31, in pounds/hour; and EQUI147PM10 = total daily average PM10 stack emissions from EQUI 147, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.106.7	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 31 using the following equation: STRU31PM2.5 = EQUI147PM2.5 where: STRU31PM2.5 = total daily average PM2.5 emissions emitted through STRU 31, in pounds/hour; and EQUI147PM2.5 = total daily average PM2.5 stack emissions from EQUI 147, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.106.8	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 31 using the following equations: STRU31L = EQUI147L STRU31L3A = [(STRU31L2 + STRU31L3 + STRU31L4 +...+ STRU31L91 + STRU31L92 + STRU31L93) - STRU31L1] / 92 days

Requirement number	Requirement and citation
	where: STRU31L# = total daily lead emissions emitted through STRU 31, in pounds/day; STRU31L3A = 92-day rolling average lead emissions emitted through STRU 31 for the previous 92-day period, in pounds/day; and EQUI147L = total lead stack emissions from EQUI 147, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.106.9	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 31 using the following equations: STRU31L = EQUI147L STRU31L365S = (STRU31L2 + STRU31L3 + STRU31L4 +.... + STRU31L364 + STRU31L365 + STRU31L366) - STRU31L1 where: STRU31L# = total daily lead emissions emitted through STRU 31, in pounds/day; STRU31L365S = 365-day rolling sum lead emissions emitted through STRU 31 for the previous 365-day period, in pounds/year; and EQUI147L = total lead stack emissions from EQUI 147, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.106.10	The Permittee is prohibited from releasing emissions of pollutants through STRU 31 from any emission units other than EQUI 147 obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) &(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 32	**Smog Hog #18 Stack**
5.107.1	The Permittee shall limit emissions of PM < 10 micron <= 0.03007 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.107.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.03007 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.107.3	The Permittee shall limit emissions of Lead <= 0.01788 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.107.4	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 32 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 32 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.107.5	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 32 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 32 for the previous 92-day period using formulas specified in this permit; and

Requirement number	Requirement and citation
	3) The 365-day rolling sum annual lead emissions from STRU 32 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.107.6	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 32 using the following equation: STRU32PM10 = EQUI149PM10 + EQUI150PM10 where: STRU32PM10 = total daily average PM10 emissions emitted through STRU 32, in pounds/hour; EQUI149PM10 = total daily average PM10 stack emissions from EQUI 149, in pounds/hour; and EQUI150PM10 = total daily average PM10 stack emissions from EQUI 150, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.107.7	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 32 using the following equation: STRU32PM2.5 = EQUI149PM2.5 + EQUI150PM2.5 where: STRU32PM2.5 = total daily average PM2.5 emissions emitted through STRU 32, in pounds/hour; EQUI149PM2.5 = total daily average PM2.5 stack emissions from EQUI 149, in pounds/hour; and EQUI150PM2.5 = total daily average PM2.5 stack emissions from EQUI 150, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.107.8	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 32 using the following equations: STRU32L = EQUI146L + EQUI158L STRU32L3A = [(STRU32L2 + STRU32L3 + STRU32L4 +...+ STRU32L91 + STRU32L92 + STRU32L93) - STRU32L1] / 92 days where: STRU32L# = total daily lead emissions emitted through STRU 32, in pounds/day; STRU32L3A = 92-day rolling average lead emissions emitted through STRU 32 for the previous 92-day period, in pounds/day; EQUI149L = total lead stack emissions from EQUI 149, in pounds/day; and EQUI150L = total lead stack emissions from EQUI 150, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.107.9	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 32 using the following equations: STRU32L = EQUI149L + EQUI150L STRU32L365S = (STRU32L2 + STRU32L3 + STRU32L4 +.... + STRU32L364 + STRU32L365 + STRU32L366) - STRU32L1 where: STRU32L# = total daily lead emissions emitted through STRU 32, in pounds/day; STRU32L365S = 365-day rolling sum lead emissions emitted through STRU 32 for the previous 365-day

Requirement number	Requirement and citation
	period, in pounds/year; EQUI149L = total lead stack emissions from EQUI 149, in pounds/day; and EQUI150L = total lead stack emissions from EQUI 150, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.107.10	The Permittee is prohibited from releasing emissions of pollutants through STRU 32 from any emission units other than EQUI 149 or EQUI 150 obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 33	**Smog Hog #19 Stack**
5.108.1	The Permittee shall limit emissions of PM < 10 micron <= 0.05370 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.108.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.05370 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.108.3	The Permittee shall limit emissions of Lead <= 0.03176 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.108.4	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 33 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 33 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.108.5	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 33 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 33 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 33 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.108.6	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 33 using the following equation: STRU33PM10 = EQUI152PM10 + EQUI156PM10 where: STRU33PM10 = total daily average PM10 emissions emitted through STRU 33, in pounds/hour; EQUI152PM10 = total daily average PM10 stack emissions from EQUI 152, in pounds/hour; and EQUI156PM10 = total daily average PM10 stack emissions from EQUI 156, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.108.7	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 33 using the following equation: STRU33PM2.5 = EQUI152PM2.5 + EQUI156PM2.5 where:

Requirement number	Requirement and citation
	STRU33PM2.5 = total daily average PM2.5 emissions emitted through STRU 33, in pounds/hour; EQUI152PM2.5 = total daily average PM2.5 stack emissions from EQUI 152, in pounds/hour; and EQUI156PM2.5 = total daily average PM2.5 stack emissions from EQUI 156, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.108.8	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 33 the following equations: STRU33L = EQUI152L + EQUI156L STRU33L3A = [(STRU33L2 + STRU33L3 + STRU33L4 +...+ STRU33L91 + STRU33L92 + STRU33L93) - STRU33L1] / 92 days where: STRU33L# = total daily lead emissions emitted through STRU 33, in pounds/day; STRU33L3A = 92-day rolling average lead emissions emitted through STRU 33 for the previous 92-day period, in pounds/day; EQUI152L = total lead stack emissions from EQUI 152, in pounds/day; and EQUI156L = total lead stack emissions from EQUI 156, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.108.9	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 33 using the following equations: STRU33L = EQUI152L + EQUI156L STRU33L365S = (STRU33L2 + STRU33L3 + STRU33L4 +.... + STRU33L364 + STRU33L365 + STRU33L366) - STRU33L1 where: STRU33L# = total daily lead emissions emitted through STRU 33, in pounds/day; STRU33L365S = 365-day rolling sum lead emissions emitted through STRU 33 for the previous 365-day period, in pounds/year; EQUI152L = total lead stack emissions from EQUI 152, in pounds/day; and EQUI156L = total lead stack emissions from EQUI 156, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.108.10	The Permittee is prohibited from releasing emissions of pollutants through STRU 33 from any emission units other than EQUI 152 or EQUI 156 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 34	**Smog Hog #20 Stack**
5.109.1	The Permittee must limit emissions of PM < 10 micron <= 0.05749 pounds per hour daily average. [Minn. R. 7007.0080, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.109.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.05749 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

Requirement number	Requirement and citation
5.109.3	The Permittee shall limit emissions of Lead <= 0.03400 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.109.4	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 34 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 34 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.109.5	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 34 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 34 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 34 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.109.6	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 34 using the following equation: STRU34PM10 = EQUI153PM10 + EQUI154PM10 where: STRU34PM10 = total daily average PM10 emissions emitted through STRU 34, in pounds/hour; EQUI153PM10 = total daily average PM10 stack emissions from EQUI 153, in pounds/hour; and EQUI154PM10 = total daily average PM10 stack emissions from EQUI 154, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.109.7	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions STRU 34 using the following equation: STRU34PM2.5 = EQUI153PM2.5 + EQUI154PM2.5 where: STRU34PM2.5 = total daily average PM2.5 emissions emitted through STRU 34, in pounds/hour; EQUI153PM2.5 = total daily average PM2.5 stack emissions from EQUI 153, in pounds/hour; and EQUI154PM2.5 = total daily average PM2.5 stack emissions from EQUI 154, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.109.8	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 34 using the following equations: STRU34L = EQUI153L + EQUI154L STRU34L3A = [(STRU34L2 + STRU34L3 + STRU34L4 +...+ STRU34L91 + STRU34L92 + STRU34L93) - STRU34L1] / 92 days where: STRU34L# = total daily lead emissions emitted through STRU 34, in pounds/day; STRU34L3A = 92-day rolling average lead emissions emitted through STRU 34 for the previous 92-day period, in pounds/day; EQUI153L = total lead stack emissions from EQUI 153, in pounds/day; and

Requirement number	Requirement and citation
	EQUI154L = total lead stack emissions from EQUI 154, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.109.9	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 34 using the following equations: STRU34L = EQUI153L + EQUI154L STRU34L365S = (STRU34L2 + STRU34L3 + STRU34L4 +.... + STRU34L364 + STRU34L365 + STRU34L366) - STRU34L1 where: STRU34L# = total daily lead emissions emitted through STRU 34, in pounds/day; STRU34L365S = 365-day rolling sum lead emissions emitted through STRU 34 for the previous 365-day period, in pounds/year; EQUI153L = total lead stack emissions from EQUI 153, in pounds/day; and EQUI154L = total lead stack emissions from EQUI 154, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.109.10	The Permittee is prohibited from releasing emissions of pollutants through STRU 34 from any emission units other than EQUI 153 or EQUI 154 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 35	**Smog Hog #21 Stack**
5.110.1	The Permittee must limit emissions of PM < 10 micron <= 0.01710 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.110.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.01710 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.110.3	The Permittee shall limit emissions of Lead <= 0.01059 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.110.4	The Permittee shall limit emissions of Lead <= 0.9412 pounds per year 365-day rolling sum. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.110.5	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 35 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 35 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.110.6	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 35 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 35 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 35 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.110.7	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 35 using the following equation:

Commented [A340]: Redundant requirement met by quarterly lead throughput limit above.

Requirement number	Requirement and citation
	STRU35PM10 = EQUI117PM10 + EQUI160PM10 where: STRU35PM10 = total daily average PM10 emissions emitted through STRU 35, in pounds/hour; and EQUI117PM10 = total daily average PM10 stack emissions from EQUI 117, in pounds/hour; EQUI160PM10 = total daily average PM10 stack emissions from EQUI 160, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.110.8	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU35 using the following equation: STRU35PM2.5 = EQUI117PM2.5 + EQUI160PM2.5 where: STRU35PM2.5 = total daily average PM2.5 emissions emitted through STRU 35, in pounds/hour; EQUI117PM2.5 = total daily average PM2.5 stack emissions from EQUI 117, in pounds/hour; and EQUI160PM2.5 = total daily average PM2.5 stack emissions from EQUI 160, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.110.9	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU35 the following equations: STRU35L = EQUI160L STRU35L3A = [(STRU35L2 + STRU35L3 + STRU35L4 +...+ STRU35L91 + STRU35L92 + STRU35L93) - STRU35L1] / 92 days where: STRU35L# = total daily lead emissions emitted through STRU 35, in pounds/day; STRU35L3A = 92-day rolling average lead emissions emitted through STRU 35 for the previous 92-day period, in pounds/day; and EQUI160L = total lead stack emissions from EQUI 160, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.110.10	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 35 using the following equations: STRU35L = EQUI160L STRU35L365S = (STRU35L2 + STRU35L3 + STRU35L4 +.... + STRU35L364 + STRU35L365 + STRU35L366) - STRU35L1 where: STRU35L# = total daily lead emissions emitted through STRU 35, in pounds/day; STRU35L365S = 365-day rolling sum lead emissions emitted through STRU 35 for the previous 365-day period, in pounds/year; and EQUI160L = total lead stack emissions from EQUI 160, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.110.11	The Permittee is prohibited from releasing emissions of pollutants through STRU 35 from any emission units other than EQUI 117 or EQUI 160 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion

Requirement number	Requirement and citation
	modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 41	**Solvent Vapor Remediation System Stack**
5.111.1	The Permittee shall limit emissions of 1,2-(trans-) Dichloroethylene <= 0.0010 pounds per hour 3-hour average. This emission rate represents uncontrolled emission rates used in modeling and AERA analysis. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)& 9(2), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.111.2	The Permittee shall limit emissions of Trichloroethylene (TCE) <= 0.00006 pounds per hour from EQUI 167. This emission rate represents uncontrolled emission rates used in modeling and AERA analysis. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)& 9(2), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.111.3	The Permittee is prohibited from releasing emissions of pollutants through STRU 41 from any emission units other than EQUI 167 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. (A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 43	**Exhaust fan #7**
5.112.1	The Permittee shall limit emissions of PM < 10 micron <= 0.01896 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.112.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.01896 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.112.3	The Permittee shall limit emissions of Lead <= 0.~~01488~~ 0.001418 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.112.4	The Permittee shall limit emissions of Nitrogen Oxides <= 0.1826 pounds per hour 1-hour average This is the emission rate used in modeling and it represents the contributions from EQUI 106 and 109. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.112.5	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 43 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 43 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.112.6	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 43 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 43 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual die casting lead emissions from STRU 43 diecast emissions for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.112.7	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 43 using the following equation: STRU43PM10 = EQUI124FPM10 + 0.014 + 0.00021 where:

Commented [A341]: Listed emission rate does not reflect final modeling.

Commented [A342]: The annual lead limit through STRU 43 is redundant and unnecessary to show compliance with risk thresholds. The limit is at the COMG 12 level and only requires tracking the STRU 43 emissions from the diecast operations.

Commented [A343]: This requirement is not necessary. Emissions from diecast machines are being calculated on the EQUI level.

Requirement number	Requirement and citation
	STRU43PM10 = total daily average PM10 emissions emitted through STRU 43, in pounds/hour; and EQUI124FPM10 = total daily average uncaptured PM10 emissions from EQUI 124, in pounds/hour 0.014 = total daily average PM10 emission contribution from EQUI106 and EQUI109, in pounds/hr; and 0.00021 = total daily average PM10 emission contribution from EQUI115, in pounds/hr. [Minn. R. 7007.0800, subps. 4-5]
5.112.8	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 43 using the following equation: STRU43PM2.5 = EQUI124FPM2.5 + 0.014 + 0.00021 where: STRU43PM2.5 = total daily average PM2.5 emissions emitted through STRU 43, in pounds/hour; and EQUI124FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 124, in pounds/hour. 0.014 = total daily average PM2.5 emission contribution from EQUI106 and EQUI109, in pounds/hr; and 0.00021 = total daily average PM2.5 emission contribution from EQUI115, in pounds/hr. [Minn. R. 7007.0800, subps. 4-5]
5.112.9	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 43 using the following equations: STRU43L = EQUI124FL + 0.00011 STRU43L3A = [(STRU43L2 + STRU43L3 + STRU43L4 + . . . + STRU43L91 + STRU43L92 + STRU43L93) - STRU43L1] / 92 days where: STRU43L# = total daily lead emissions emitted through STRU 43, in pounds/day; STRU43L3A = 92-day rolling average lead emissions emitted through STRU 43 for the previous 92-day period, in pounds/day; EQUI124FL = total uncaptured lead emissions from EQUI 124, in pounds/day; and 0.00011 = lead emission contribution from EQUI115, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.112.10	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 43 using the following equations: STRU43L = EQUI124FL STRU43L365S = (STRU43L2 + STRU43L3 + STRU43L4 + . . . + STRU43L364 + STRU43L365 + STRU43L366) - STRU43L1 where: STRU43L# = total daily lead emissions emitted through STRU 43, in pounds/day; STRU43L365S = 365-day rolling sum lead emissions emitted through STRU 43 for the previous 365-day period, in pounds/year; and EQUI124FL = total uncaptured lead emissions from EQUI 124, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.112.11	The Permittee is prohibited from releasing emissions of pollutants through STRU 43 from any emission units other than EQUI 106, EQUI 109, EQUI 115, and EQUI 124 without obtaining a major

Commented [A344]: See previous comment on formula.

Commented [A345]: Unnecessary requirement. See previous comment.

Commented [A346]: See previous comment on formula.

Commented [A347]: Unnecessary requirement. See previous comment.

Commented [A348]: See previous comment on formula.

Requirement number	Requirement and citation
	amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 44	**Exhaust fan #1**
5.113.1	The Permittee shall limit emissions of PM < 10 micron <= 0.07081 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.113.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.07081 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.113.3	The Permittee shall limit emissions of Lead <= 0.01061 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.113.4	The Permittee shall limit emissions of Nitrogen Oxides <= 0.4070 pounds per hour 1-hour average This is the emission rate used in modeling and it represents the contributions from EQUI 107, EQUI 108 and EQUI 111. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.113.5	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 44 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 44 diecast emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.113.6	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 44 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 44 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual die casting lead emissions from STRU 44 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.113.7	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 44 using the following equation: STRU44PM10 = EQUI130FPM10 + EQUI131FPM10 + EQUI132FPM10 + EQUI133FPM10 + EQUI134FPM10 + EQUI135FPM10 + EQUI136FPM10+ 0.03093 where: STRU44PM10 = total daily average PM10 emissions emitted through STRU 44, in pounds/hour; EQUI130FPM10 = total daily average uncaptured PM10 emissions from EQUI 130, in pounds/hour; EQUI131FPM10 = total daily average uncaptured PM10 emissions from EQUI 131, in pounds/hour; EQUI132FPM10 = total daily average uncaptured PM10 emissions from EQUI 132, in pounds/hour; EQUI133FPM10 = total daily average uncaptured PM10 emissions from EQUI 133, in pounds/hour; EQUI134FPM10 = total daily average uncaptured PM10 emissions from EQUI 134, in pounds/hour; EQUI135FPM10 = total daily average uncaptured PM10 emissions from EQUI 135, in pounds/hour; EQUI136FPM10 = total daily average uncaptured PM10 emissions from EQUI 136, in pounds/hour; and

Commented [A349]: The annual lead limit through STRU 44 is redundant and unnecessary to show compliance with risk thresholds. The limit is at the COMG 12 level and only requires tracking the STRU 44 emissions from the diecast operations.

Commented [A350]: These are only the diecast emissions from STRU 44. This requirement is unnecessary. The EQUI-level recordkeeping is sufficient.

Requirement number	Requirement and citation
	0.03093 = total daily average PM10 emission contribution from EQUI 107, EQUI 108 and EQUI 111, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.113.8	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 44 using the following equation: STRU44PM2.5 = EQUI130FPM2.5 + EQUI131FPM2.5 + EQUI132FPM2.5 + EQUI133FPM2.5 + EQUI134FPM2.5 + EQUI135FPM2.5 + EQUI136FPM2.5+ 0.03093 where: STRU44PM2.5 = total daily average PM2.5 emissions emitted through STRU 44, in pounds/hour; EQUI130FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 130, in pounds/hour; EQUI131FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 131, in pounds/hour; EQUI132FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 132, in pounds/hour; EQUI133FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 133, in pounds/hour; EQUI134FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 134, in pounds/hour; EQUI135FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 135, in pounds/hour; EQUI136FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 136, in pounds/hour; and 0.03093 = total daily average PM2.5 emission contribution from EQUI 107, EQUI 108 and EQUI 111, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.113.9	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 44 using the following equations: STRU44L = EQUI130FL + EQUI131FL + EQUI132FL + EQUI133FL + EQUI134FL + EQUI135FL + EQUI136FL STRU44L3A = [(STRU44L2 + STRU44L3 + STRU44L4 + . . . + STRU44L91 + STRU44L92 + STRU44L93) - STRU44L1] / 92 days where: STRU44L# = total daily lead emissions emitted through STRU 44, in pounds/day; STRU44L3A = 92-day rolling average lead emissions emitted through STRU 44 for the previous 92-day period, in pounds/day; EQUI130FL = total uncaptured lead emissions from EQUI 130, in pounds/day; EQUI131FL = total uncaptured lead emissions from EQUI 131, in pounds/day; EQUI132FL = total uncaptured lead emissions from EQUI 132, in pounds/day; EQUI133FL = total uncaptured lead emissions from EQUI 133, in pounds/day; EQUI134FL = total uncaptured lead emissions from EQUI 134, in pounds/day; EQUI135FL = total uncaptured lead emissions from EQUI 135, in pounds/day; and EQUI136FL = total uncaptured lead emissions from EQUI 136, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.113.10	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 44 using the following equations: STRU44L = EQUI130FL + EQUI131FL + EQUI132FL + EQUI133FL + EQUI134FL + EQUI135FL + EQUI136FL STRU44L365S = (STRU44L2 + STRU44L3 + STRU44L4 + . . . +STRU44L364 + STRU44L365 + STRU44L366) - STRU44L1 where:

Commented [A351]: See previous comment. This requirement is unnecessary. The EQUI-level recordkeeping is sufficient.

Commented [A352]: See previous comment: unnecessary requirement and wrong formula. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Commented [A353]: See previous comment: unnecessary requirement and wrong formula. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Requirement number	Requirement and citation
	STRU44L# = total daily lead emissions emitted through STRU 44, in pounds/day; STRU44L365S = 365-day rolling sum lead emissions emitted through STRU 44 for the previous 365-day period, in pounds/year; EQUI130FL = total uncaptured lead emissions from EQUI 130, in pounds/day; EQUI131FL = total uncaptured lead emissions from EQUI 131, in pounds/day; EQUI132FL = total uncaptured lead emissions from EQUI 132, in pounds/day; EQUI133FL = total uncaptured lead emissions from EQUI 133, in pounds/day; EQUI134FL = total uncaptured lead emissions from EQUI 134, in pounds/day; EQUI135FL = total uncaptured lead emissions from EQUI 135, in pounds/day; and EQUI136FL = total uncaptured lead emissions from EQUI 136, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.113.11	The Permittee is prohibited from releasing emissions of pollutants through STRU 44 from any emission units other than EQUI 107, EQUI 108, EQUI 111, EQUI 130, EQUI 131, EQUI 132, EQUI 133, EQUI 134, EQUI 135, or EQUI 136 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 45	**Exhaust fan #2**
5.114.1	The Permittee shall limit emissions of PM < 10 micron <= 0.05712 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.114.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.05712 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.114.3	The Permittee shall limit emissions of Lead <= 0.006982 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.114.4	The Permittee shall limit emissions of Nitrogen Oxides <= 0.4069 pounds per hour 1-hour average This is the emission rate used in modeling and it represents the contributions from EQUI 107, EQUI 108 and EQUI 111. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.114.5	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 45 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 45 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.114.6	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 45 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 45 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual die casting lead emissions from STRU 45 diecast emissions for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.114.7	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 45 using the following equation: STRU45PM10 = EQUI137FPM10 + EQUI138FPM10 + EQUI139FPM10 + EQUI140FPM10 + EQUI141FPM10+ 0.03093

Commented [A354]: Unnecessary requirement: EQUI-level recordkeeping and emission calculations are sufficient. Also, this formula is wrong: MAUs also vent through STRU 45.

Requirement number	Requirement and citation
	where: STRU45PM10 = total daily average PM10 emissions emitted through STRU 45, in pounds/hour; EQUI137FPM10 = total daily average uncaptured PM10 emissions from EQUI 137, in pounds/hour; EQUI138FPM10 = total daily average uncaptured PM10 emissions from EQUI 138, in pounds/hour; EQUI139FPM10 = total daily average uncaptured PM10 emissions from EQUI 139, in pounds/hour; EQUI140FPM10 = total daily average uncaptured PM10 emissions from EQUI 140, in pounds/hour; EQUI141FPM10 = total daily average uncaptured PM10 emissions from EQUI 141, in pounds/hour; and 0.0303 = total daily average PM10 emission contribution from EQUI 107, EQUI 108 and EQUI 111, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.114.8	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 45 using the following equation: STRU45PM2.5 = EQUI137FPM2.5 + EQUI138FPM2.5 + EQUI139FPM2.5 + EQUI140FPM2.5 + EQUI141FPM2.5+ 0.03093 where: STRU45PM2.5 = total daily average PM2.5 emissions emitted through STRU 45, in pounds/hour; EQUI137FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 137, in pounds/hour; EQUI138FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 138, in pounds/hour; EQUI139FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 139, in pounds/hour; EQUI140FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 140, in pounds/hour; EQUI141FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 141, in pounds/hour; 0.03093 = total daily average PM2.5 emission contribution from EQUI 107, EQUI 108 and EQUI 111, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.114.9	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 45 using the following equations: STRU45L = EQUI137FL + EQUI138FL + EQUI139FL + EQUI140FL + EQUI141FL STRU45L3A = [(STRU45L2 + STRU45L3 + STRU45L4 +...+ STRU45L91 + STRU45L92 + STRU45L93) - STRU45L1] / 92 days where: STRU45L# = total daily lead emissions emitted through STRU 45, in pounds/day; STRU45L3A = 92-day rolling average lead emissions emitted through STRU 45 for the previous 92-day period, in pounds/day; EQUI137FL = total uncaptured lead emissions from EQUI 137, in pounds/day; EQUI138FL = total uncaptured lead emissions from EQUI 138, in pounds/day; EQUI139FL = total uncaptured lead emissions from EQUI 139, in pounds/day; EQUI140FL = total uncaptured lead emissions from EQUI 140, in pounds/day; and EQUI141FL = total uncaptured lead emissions from EQUI 141, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.114.10	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 45 using the following equations: STRU45L = EQUI137FL + EQUI138FL + EQUI139FL + EQUI140FL + EQUI141FL

Commented [A355]: This constant does not match the formula above for 5.114.7. Both should be confirmed and corrected so they are consistent.

Commented [A356]: See previous comment. Unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Commented [A357]: See previous comment: unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Commented [A358]: See previous comment: unnecessary requirement, redundant due to the quarterly averaging requirements. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Requirement number	Requirement and citation
	STRU45L365S = (STRU45L2 + STRU45L3 + STRU45L4 +...+ STRU45L364 + STRU45L365 + STRU45L366) - STRU45L1 where: STRU45L# = total daily lead emissions emitted through STRU 45, in pounds /day; STRU45L365S = 365-day rolling sum lead emissions emitted through STRU 45 for the previous 365-day period, in pounds/year; EQUI137FL = total uncaptured lead emissions from EQUI 137, in pounds/day; EQUI138FL = total uncaptured lead emissions from EQUI 138, in pounds/day; EQUI139FL = total uncaptured lead emissions from EQUI 139, in pounds/day; EQUI140FL = total uncaptured lead emissions from EQUI 140, in pounds/day; and EQUI141FL = total uncaptured lead emissions from EQUI 141, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.114.11	The Permittee is prohibited from releasing emissions of pollutants through STRU 45 from any emission units other than EQUI 107, EQUI 108, EQUI 111, EQUI 137, EQUI 138, EQUI 139, EQUI 140 or EQUI 141 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 46	**Exhaust fan #3**
5.115.1	The Permittee shall limit emissions of PM < 10 micron <= 0.04535 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.115.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.04535 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.115.3	The Permittee shall limit emissions of Lead <= 0.003868 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.115.4	The Permittee shall limit emissions of Nitrogen Oxides <= 0.4070 pounds per hour 1-hour average This is the emission rate used in modeling and it represents the contributions from EQUI 107, EQUI 108 and EQUI 111. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.115.5	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 46 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 46 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.115.6	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 46 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 46 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual die casting lead emissions from STRU 46 diecast emissions for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.115.7	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 46 using the following

Commented [A359]: Unnecessary. Recordkeeping should be at the EQUI level, not STRU level.

Commented [A360]: See previous comments. Recordkeeping should be at the EQUI level, not STRU level.

Commented [A361]: See previous comments. Unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Requirement number	Requirement and citation
	equation: STRU46PM10 = EQUI142FPM10 + EQUI143FPM10 + EQUI155FPM10 + 0.03093 where: STRU46PM10 = total daily average PM10 emissions emitted through STRU 46, in pounds/hour; EQUI142FPM10 = total daily average uncaptured PM10 emissions from EQUI 142, in pounds/hour; EQUI143FPM10 = total daily average uncaptured PM10 emissions from EQUI 143, in pounds/hour; EQUI155FPM10 = total daily average uncaptured PM10 emissions from EQUI 155, in pounds/hour; and 0.03093 = total daily average PM10 emission contribution from EQUI 107, EQUI 108 and EQUI 111, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.115.8	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 46 using the following equation: STRU46PM2.5 = EQUI142FPM2.5 + EQUI143FPM2.5 + EQUI155FPM2.5+ 0.03093 where: STRU46PM2.5 = total daily average PM2.5 emissions emitted through STRU 46, in pounds/hour; EQUI142FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 142, in pounds/hour; EQUI143FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 143, in pounds/hour; EQUI155FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 155, in pounds/hour; and 0.03093 = total daily average PM2.5 emission contribution from EQUI 107, EQUI 108 and EQUI 111, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.115.9	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 46 using the following equations: STRU46L = EQUI142FL + EQUI143FL + EQUI155FL STRU46L3A = [(STRU46L2 + STRU46L3 + STRU46L4 +...+ STRU46L91 + STRU46L92 + STRU46L93) - STRU46L1] / 92 days where: STRU46L# = total daily lead emissions emitted through STRU 46, in pounds/day; STRU46L3A = 92-day rolling average lead emissions emitted through STRU 46 for the previous 92-day period, in pounds/day; EQUI142FL = total uncaptured lead emissions from EQUI 142, in pounds/day; EQUI143FL = total uncaptured lead emissions from EQUI 143, in pounds/day; and EQUI155FL = total uncaptured lead emissions from EQUI 155, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.115.10	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 46 using the following equations: STRU46L = EQUI142FL + EQUI143FL + EQUI155FL STRU46L365S = (STRU46L2 + STRU46L3 + STRU46L4 +...+ STRU46L364 + STRU46L365 + STRU46L366) - STRU46L1 where:

Commented [A362]: See above. Unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Commented [A363]: See above. Unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Commented [A364]: See above. Redundant to 5.103.9. Also redundant to tracking at EQUI level. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Requirement number	Requirement and citation
	STRU46L# = total daily lead emissions emitted through STRU 46, in pounds/day; STRU46L365S = 365-day rolling sum lead emissions emitted through STRU 46 for the previous 365-day period, in pounds/year; EQUI142FL = total uncaptured lead emissions from EQUI 142, in pounds/day; EQUI143FL = total uncaptured lead emissions from EQUI 143, in pounds/day; and EQUI155FL = total uncaptured lead emissions from EQUI 155, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.115.11	The Permittee is prohibited from releasing emissions of pollutants through STRU 46 from any emission units other than EQUI 107, EQUI 108, EQUI 111, EQUI 142, EQUI 143, or EQUI 155 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) &(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 47	**Exhaust fan #4**
5.116.1	The Permittee shall limit emissions of PM < 10 micron <= 0.02241 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.116.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.02241 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.116.3	The Permittee shall limit emissions of Lead <= 0.001958 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.116.4	The Permittee shall limit emissions of Nitrogen Oxides <= 0.1987 pounds per hour 1-hour average This is the emission rate used in modeling and it represents the contributions from EQUI 106 and EQUI 108. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.116.5	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 47 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 47 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.116.6	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 47 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 47 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual die casting lead emissions from STRU 47 diecast emissions for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.116.7	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 47 using the following equation: STRU47PM10 = EQUI127FPM10 + EQUI128FPM10 + EQUI129FPM10 + 0.01510 where: STRU47PM10 = total daily average PM10 emissions emitted through STRU 47, in pounds/hour;

Commented [A365]: See previous comments. Unnecessary to track at STRU level – EQUI level is more appropriate.

Commented [A366]: See above.

Commented [A367]: See above.

Commented [A368]: See above.

Commented [A369]: Recordkeeping should be on the EQUI level.

Commented [A370]: See above.

Commented [A371]: See previous comments: unnecessary requirement as the EQUI-level tracking is sufficient. Wrong formula as MAUs also vent to STRU 47. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Requirement number	Requirement and citation
	EQUI127FPM10 = total daily average uncaptured PM10 emissions from EQUI 127, in pounds/hour; EQUI128FPM10 = total daily average uncaptured PM10 emissions from EQUI 128, in pounds/hour; EQUI129FPM10 = total daily average uncapturedPM10 emissions from EQUI 129, in pounds/hour; and 0.01510 = total daily average PM10 emission contribution from EQUI 106 and EQUI 108, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.116.8	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 47 using the following equation: STRU47PM2.5 = EQUI127FPM2.5 + EQUI128FPM2.5 + EQUI129FPM2.5 + 0.01510 where: STRU47PM2.5 = total daily average PM2.5 emissions emitted through STRU 47, in pounds/hour; EQUI127FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 127, in pounds/hour; EQUI128FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 128, in pounds/hour; EQUI129FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 129, in pounds/hour; and 0.01510 = total daily average PM2.5 emission contribution from EQUI 106 and EQUI 108, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.116.9	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 47 using the following equations: STRU47L = EQUI127FL + EQUI128FL + EQUI129FL STRU47L3A = [(STRU47L2 + STRU47L3 + STRU47L4 +...+ STRU47L91 + STRU47L92 + STRU47L93) - STRU47L1] / 92 days where: STRU47L# = total daily lead emissions emitted through STRU 47, in pounds/day; STRU47L3A = 92-day rolling average lead emissions emitted through STRU 47 for the previous 92-day period, in pounds/day; EQUI127FL = total uncaptured lead emissions from EQUI 127, in pounds/day; EQUI128FL = total uncaptured lead emissions from EQUI 128, in pounds/day; and EQUI129FL = total uncaptured lead emissions from EQUI 129, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.116.10	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 47 using the following equations: STRU47L = EQUI127FL + EQUI128FL + EQUI129FL STRU47L365S = (STRU47L2 + STRU47L3 + STRU47L4 +...+ STRU47L364 + STRU47L365 + STRU47L366) - STRU47L1 where: STRU47L# = total daily lead emissions emitted through STRU 47, in pounds/day; STRU47L365S = 365-day rolling sum lead emissions emitted through STRU 47 for the previous 365-day period, in pounds/year; EQUI127FL = total uncaptured lead emissions from EQUI 127, in pounds/day; EQUI128FL = total uncaptured lead emissions from EQUI 128, in pounds/day; and

Commented [A372]: Delete this requirement. See above: unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Commented [A373]: Delete this requirement. See above: unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Commented [A374]: See above: redundant to 5.116.9, unnecessary with EQUI recordkeeping. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Requirement number	Requirement and citation
	EQUI129FL = total uncaptured lead emissions from EQUI 129, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.116.11	The Permittee is prohibited from releasing emissions of pollutants through STRU 47 from any emission units other than EQUI 106, EQUI 108, EQUI 127, EQUI 128, or EQUI 129 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 48	**Exhaust fan #5**
5.117.1	The Permittee shall limit emissions of PM < 10 micron <= 0.02520 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.117.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.02520 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.117.3	The Permittee shall limit emissions of Lead <= 0.003020 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.117.4	The Permittee shall limit emissions of Nitrogen Oxides <= 0.1826 pounds per hour 1-hour average This is the emission rate used in modeling and it represents the contributions from EQUI 106 and EQUI 109. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.117.5	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 48 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 48 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.117.6	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 48 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 48 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual die casting lead emissions from STRU 48 diecast emissions for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.117.7	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 48 using the following equation: STRU48PM10 = EQUI121FPM10 + EQUI122FPM10 + 0.01338 where: STRU48PM10 = total daily average PM10 emissions emitted through STRU 48, in pounds/hour; EQUI121FPM10 = total daily average uncaptured PM10 emissions from EQUI 121, in pounds/hour; EQUI122FPM10 = total daily average uncaptured PM10 emissions from EQUI 122, in pounds/hour; and 0.01338 = total daily average PM10 emission contribution from EQUI 106 and EQUI 109, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]

Commented [A375]: Recordkeeping should be on the EQUI level, not STRU level.

Commented [A376]: Delete this requirement. See above: unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Requirement number	Requirement and citation
5.117.8	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 48 using the following equation: STRU48PM2.5 = EQUI121FPM2.5 + EQUI122FPM2.5 + 0.01338 where: STRU48PM2.5 = total daily average PM2.5 emissions emitted through STRU 48, in pounds/hour; EQUI121FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 121, in pounds/hour; EQUI122FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 122, in pounds/hour; and 0.01338 = total daily average PM2.5 emission contribution from EQUI 106 and EQUI 109, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.117.9	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 48 using the following equations: STRU48L = EQUI121FL + EQUI122FL STRU48L3A = [(STRU48L2 + STRU48L3 + STRU48L4 +...+ STRU48L91 + STRU48L92 + STRU48L93) - STRU48L1] / 92 days where: STRU48L# = total daily lead emissions emitted through STRU 48, in pounds/day; STRU48L3A = 92-day rolling average lead emissions emitted through STRU 48 for the previous 92-day period, in pounds/day; EQUI121FL = total uncaptured lead emissions from EQUI 121, in pounds/day; and EQUI122FL = total uncaptured lead emissions from EQUI 122, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.117.10	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 48 using the following equations: STRU48L = EQUI121FL + EQUI122FL STRU48L365S = (STRU48L2 + STRU48L3 + STRU48L4 +...+ STRU48L364 + STRU48L365 + STRU48L366) - STRU48L1 where: STRU48L# = total daily lead emissions emitted through STRU 48, in pounds/day; STRU48L365S = 365-day rolling sum lead emissions emitted through STRU 48 for the previous 365-day period, in pounds/year; EQUI121FL = total uncaptured lead emissions from EQUI 121, in pounds/day; and EQUI122FL = total uncaptured lead emissions from EQUI 122, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.117.11	The Permittee is prohibited from releasing emissions of pollutants through STRU 48 from any emission units other than EQUI 106, EQUI 109, EQUI 121 or EQUI 122 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 49	**Exhaust fan #6**

Commented [A377]: Delete this requirement. See above: unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Commented [A378]: Delete this requirement. See above: unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Commented [A379]: Redundant to 5.117.9. Delete this requirement. See above: unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Requirement number	Requirement and citation
5.118.1	The Permittee shall limit emissions of PM < 10 micron <= 0.01779 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.118.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.01779 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.118.3	The Permittee shall limit emissions of Lead <= 0.001057 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.118.4	The Permittee shall limit emissions of Nitrogen Oxides <= 0.1823 pounds per hour 1-hour average This is the emission rate used in modeling and it represents the contributions from EQUI 106 and EQUI 109. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.118.5	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 49 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 49 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.118.6	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 49 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 49 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual die casting lead emissions from STRU 49 diecast emissions for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.118.7	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 49 using the following equation: STRU49PM10 = EQUI123FPM10 + 0.01338 where: STRU49PM10 = total daily average PM10 emissions emitted through STRU 49, in pounds/hour; EQUI123FPM10 = total daily average uncaptured PM10 emissions from EQUI 123, in pounds/hour; and 0.01338 = total daily average PM10 emission contribution from EQUI 106 and EQUI 109, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.118.8	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 49 using the following equation: STRU49PM2.5 = EQUI123FPM2.5 + 0.01338 where: STRU49PM2.5 = total daily average PM2.5 emissions emitted through STRU 49, in pounds/hour; EQUI123FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 123, in pounds/hour; and

Commented [A380]: Delete this requirement. Recordkeeping should be at EQUI level, not STRU level.

Commented [A381]: Delete this requirement. Recordkeeping should be at EQUI level, not STRU level.

Commented [A382]: Delete this requirement. See above: unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Commented [A383]: Delete this requirement. See above: unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Requirement number	Requirement and citation
	0.01338 = total daily average PM2.5 emission contribution from EQUI 106 and EQUI 109, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.118.9	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 49 using the following equations: STRU49L = EQUI123FL STRU49L3A = [(STRU49L2 + STRU49L3 + STRU49L4 +...+ STRU49L91 + STRU49L92 + STRU49L93) - STRU49L1] / 92 days where: STRU49L# = total daily lead emissions emitted through STRU 49, in pounds/day; STRU49L3A = 92-day rolling average lead emissions emitted through STRU 49 for the previous 92-day period, in pounds/day; and EQUI123FL = total uncaptured lead emissions from EQUI 123, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.118.10	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 49 using the following equations: STRU49L = EQUI123FL STRU49L365S = (STRU49L2 + STRU49L3 + STRU49L4 +...+ STRU49L364 + STRU49L365 + STRU49L366) - STRU49L1 where: STRU49L# = total daily lead emissions emitted through STRU 49, in pounds/day; STRU49L365S = 365-day rolling sum lead emissions emitted through STRU 49 for the previous 365-day period, in pounds/year; and EQUI123FL = total uncaptured lead emissions from EQUI 123, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.118.11	The Permittee is prohibited from releasing emissions of pollutants through STRU 49 from any emission units other than EQUI 106, EQUI 109 or EQUI 123 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 50	**Exhaust fan #8**
5.119.1	The Permittee shall limit emissions of PM < 10 micron <= 0.01688 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.119.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.01688 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.119.3	The Permittee shall limit emissions of Lead <= 0.002092 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.119.4	The Permittee shall limit emissions of Nitrogen Oxides <= 0.1213 pounds per hour 1-hour average This is the emission rate used in modeling and it represents the contributions from EQUI 109. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.119.5	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following:

Commented [A384]: Delete this requirement. See above: unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Commented [A385]: Delete this requirement. See above: unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.
Also redundant to 5.106.9.

Commented [A386]: Delete this requirement. Recordkeeping should be at EQUI level, not STRU level.

Requirement number	Requirement and citation
	1) The total daily average hourly PM10 emissions from STRU 50 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 50 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.119.6	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 50 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 50 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual die casting lead emissions from STRU 50 diecast emissions for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.119.7	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 50 using the following equation: STRU50PM10 = EQUI125FPM10 + EQUI126FPM10 + 0.00922 + 0.00021 where: STRU50PM10 = total daily average PM10 emissions emitted through STRU 50, in pounds/hour; EQUI125FPM10 = total daily average uncaptured PM10 emissions from EQUI 125, in pounds/hour; EQUI126FPM10 = total daily average uncaptured PM10 emissions from EQUI 126, in pounds/hour; 0.00922 = total daily average PM10 emission contribution from EQUI 109, in pounds/hour; and 0.00021 = PM10 emission contribution from EQUI115, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.119.8	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 50 using the following equation: STRU50PM2.5 = EQUI125FPM2.5 + EQUI126FPM2.5 + 0.00922 + 0.00021 where: STRU50PM2.5 = total daily average PM2.5 emissions emitted through STRU 50, in pounds/hour; EQUI125FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 125, in pounds/hour; EQUI126FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 126, in pounds/hour; 0.00922 = total daily average PM2.5 emission contribution from EQUI 109, in pounds/hour; and 0.00021 = PM2.5 emission contribution from EQUI115, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.119.9	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 50 using the following equations: STRU50L = EQUI125FL + EQUI126FL + 0.000106 STRU50L3A = [(STRU50L2 + STRU50L3 + STRU50L4 +...+ STRU50L91 + STRU50L92 + STRU50L93) - STRU50L1] / 92 days where: STRU50L# = total daily lead emissions emitted through STRU 50, in pounds/day; STRU50L3A = 92-day rolling average lead emissions emitted through STRU 50 for the previous 92-day period, in pounds/day;

Commented [A387]: Delete this requirement. Recordkeeping should be at EQUI level, not STRU level.

Commented [A388]: Delete this requirement. See above: unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Commented [A389]: Delete this requirement. See above: unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Commented [A390]: Delete this requirement. See above: unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Requirement number	Requirement and citation
	EQUI125FL = total uncaptured lead emissions from EQUI 125, in pounds/day; EQUI126FL = total uncaptured lead emissions from EQUI 126, in pounds/day; and 0.000106 = lead emission contribution from EQUI115, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.119.10	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 50 using the following equations: STRU50L = EQUI125FL + EQUI126FL STRU50L365S = (STRU50L2 + STRU50L3 + STRU50L4 +...+ STRU50L364 + STRU50L365 + STRU50L366) - STRU50L1 where: STRU50L# = total daily lead emissions emitted through STRU 50, in pounds/day; STRU50L365S = 365-day rolling sum lead emissions emitted through STRU 50 for the previous 365-day period, in pounds/year; EQUI125FL = total uncaptured lead emissions from EQUI 125, in pounds/day; and EQUI126FL = total uncaptured lead emissions from EQUI 126, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.119.11	The Permittee is prohibited from releasing emissions of pollutants through STRU 50 from any emission units other than EQUI 109, EQUI 115, EQUI 116, EQUI 125, or EQUI 126 or EQUI 233 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 51	**Exhaust fan #9**
5.120.1	The Permittee shall limit emissions of PM < 10 micron <= 0.05654 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.120.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.05654 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.120.3	The Permittee shall limit emissions of Lead <= 0.01006 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.120.4	The Permittee shall limit emissions of Nitrogen Oxides <= 0.2453 pounds per hour 1-hour average This is the emission rate used in modeling and it represents the contributions from EQUI 110 and EQUI 112. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.120.5	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 51 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 51 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.120.6	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 51 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 51 for the previous 92-day period using

Commented [A391]: Delete this requirement. See above: unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.
Redundant to 5.119.9.

Commented [A392]: Delete this requirement. Recordkeeping should be at the EQUI level, not the STRU level.

Requirement number	Requirement and citation
	formulas specified in this permit; and 3) The 365-day rolling sum annual die casting lead emissions from STRU 51 diecast emissions for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.120.7	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 51 using the following equation: STRU51PM10 = EQUI149FPM10 + EQUI152FPM10 + EQUI154FPM10 + EQUI156FPM10+ 0.01864 where: STRU51PM10 = total daily average PM10 emissions emitted through STRU 51, in pounds/hour; EQUI149FPM10 = total daily average uncaptured PM10 emissions from EQUI 149, in pounds/hour; EQUI152FPM10 = total daily average uncaptured PM10 emissions from EQUI 152, in pounds/hour; EQUI154FPM10 = total daily average uncaptured PM10 emissions from EQUI 154, in pounds/hour; EQUI156FPM10 = total daily average uncaptured PM10 emissions from EQUI 156, in pounds/hour; and 0.01864 = total daily average PM10 emission contribution from EQUI 110 and 112, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.120.8	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 51 using the following equation: STRU51PM2.5 = EQUI149FPM2.5 + EQUI152FPM2.5 + EQUI154FPM2.5 + EQUI156FPM2.5 + 0.01864 where: STRU51PM2.5 = total daily average PM2.5 emissions emitted through STRU 51, in pounds/hour; EQUI149FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 149, in pounds/hour; EQUI152FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 152, in pounds/hour; EQUI154FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 154, in pounds/hour; EQUI156FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 156, in pounds/hour; and 0.01864 = total daily average PM2.5 emission contribution from EQUI 110 and 112, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.120.9	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 51 using the following equations: STRU51L = EQUI149FL + EQUI152FL + EQUI154FL + EQUI156FL STRU51L3A = [(STRU51L2 + STRU51L3 + STRU51L4 +...+ STRU51L91 + STRU51L92 + STRU51L93) - STRU51L1] / 92 days where: STRU51L# = total daily lead emissions emitted through STRU 51, in pounds/day; STRU51L3A = 92-day rolling average lead emissions emitted through STRU 51 for the previous 92-day period, in pounds/day; EQUI149FL = total uncaptured lead emissions from EQUI 149, in pounds/day; EQUI152FL = total uncaptured lead emissions from EQUI 152, in pounds/day; EQUI154FL = total uncaptured lead emissions from EQUI 154, in pounds/day; and EQUI156FL = total uncaptured lead emissions from EQUI 156, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]

Commented [A393]: Delete this requirement. See above: Unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Commented [A394]: Delete this requirement. See above: Unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Commented [A395]: Delete this requirement. See above: Unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Requirement number	Requirement and citation
5.120.10	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 51 using the following equations: STRU51L = EQUI149FL + EQUI152FL + EQUI154FL + EQUI156FL STRU51L365S = (STRU51L2 + STRU51L3 + STRU51L4 +...+ STRU51L364 + STRU51L365 + STRU51L366) - STRU51L1 where: STRU51L# = total daily lead emissions emitted through STRU 51, in pounds/day; STRU51L365S = 365-day rolling sum lead emissions emitted through STRU 51 for the previous 365-day period, in pounds/year; EQUI149FL = total uncaptured lead emissions from EQUI 149, in pounds/day; EQUI152FL = total uncaptured lead emissions from EQUI 152, in pounds/day; EQUI154FL = total uncaptured lead emissions from EQUI 154, in pounds/day; and EQUI156FL = total uncaptured lead emissions from EQUI 156, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.120.11	The Permittee is prohibited from releasing emissions of pollutants through STRU 51 from any emission units other than EQUI 110, EQUI 112, EQUI 149, EQUI 152, EQUI 154, or EQUI 156 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 52	**Exhaust fan #10**
5.121.1	The Permittee shall limit emissions of PM < 10 micron <= 0.04234 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.121.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.04234 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.121.3	The Permittee shall limit emissions of Lead <= 0.006304 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.121.4	The Permittee shall limit emissions of Nitrogen Oxides <= 0.2453 pounds per hour 1-hour average This is the emission rate used in modeling and it represents the contributions from EQUI 110 and EQUI 112. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.121.5	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 52 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 52 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.121.6	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 52 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 52 for the previous 92-day period using formulas specified in this permit; and

Commented [A396]: Delete this requirement. See above: Unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Commented [A397]: Delete this requirement. Recordkeeping should be done at the EQUI level, not the STRU level.

Requirement number	Requirement and citation
	3) The 365-day rolling sum annual die casting lead emissions from STRU 52 diecast emissions for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.121.7	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 52 using the following equation: STRU52PM10 = EQUI147FPM10 + EQUI158FPM10 + 0.01864 where: STRU52PM10 = total daily average PM10 emissions emitted through STRU 52, in pounds/hour; EQUI147FPM10 = total daily average uncaptured PM10 emissions from EQUI 147, in pounds/hour; EQUI158FPM10 = total daily average uncaptured PM10 emissions from EQUI 158, in pounds/hour; and 0.01864 = total daily average PM10 emission contribution from EQUI 110 and EQUI 112, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.121.8	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 52 using the following equation: STRU52PM2.5 = EQUI147FPM2.5 + EQUI158FPM2.5 + 0.01864 where: STRU52PM2.5 = total daily average PM2.5 emissions emitted through STRU 52, in pounds/hour; EQUI147FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 147, in pounds/hour; and EQUI158FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 158, in pounds/hour; and 0.01864 = total daily average PM2.5 emission contribution from EQUI 110 and EQUI 112, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.121.9	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 52 using the following equations: STRU52L = EQUI147FL + EQUI158FL STRU52L3A = [(STRU52L2 + STRU52L3 + STRU52L4 +...+ STRU52L91 + STRU52L92 + STRU52L93) - STRU52L1] / 92 days where: STRU52L# = total daily lead emissions emitted through STRU 52, in pounds/day; STRU52L3A = 92-day rolling average lead emissions emitted through STRU 52 for the previous 92-day period, in pounds/day; EQUI147FL = total uncaptured lead emissions from EQUI 147, in pounds/day; and EQUI158FL = total uncaptured lead emissions from EQUI 158, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.121.10	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 52 using the following equations: STRU52L = EQUI147FL + EQUI158FL STRU52L365S = (STRU52L2 + STRU52L3 + STRU52L4 +...+ STRU52L364 + STRU52L365 + STRU52L366) - STRU52L1

Commented [A398]: Delete this requirement. See above: Unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Commented [A399]: Delete this requirement. See above: Unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Commented [A400]: Delete this requirement. See above: Unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Commented [A401]: Delete this requirement. See above: Unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Requirement number	Requirement and citation
	where: STRU52L# = total daily lead emissions emitted through STRU 52, in pounds/day; STRU52L365S = 365-day rolling sum lead emissions emitted through STRU 52 for the previous 365-day period, in pounds/year; EQUI147FL = total uncaptured lead emissions from EQUI 147, in pounds/day; and EQUI158FL = total uncaptured lead emissions from EQUI 158, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.121.11	The Permittee is prohibited from releasing emissions of pollutants through STRU 52 from any emission units other than EQUI 110, EQUI 112, EQUI 147 or EQUI 158 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A)& (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07,subd. 4a(a)]
STRU 53	**Exhaust fan #11**
5.122.1	The Permittee shall limit emissions of PM < 10 micron <= 0.03630 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.122.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.03630 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.122.3	The Permittee shall limit emissions of Lead <= 0.004705 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.122.4	The Permittee shall limit emissions of Nitrogen Oxides <= 0.2453 pounds per hour 1-hour average This is the emission rate used in modeling and it represents the contributions from EQUI 110 and EQUI 112. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.122.5	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 53 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 53 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.122.6	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 53 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 53 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual die casting lead emissions from STRU 53 diecast emissions for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.122.7	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 53 using the following equation: STRU53PM10 = EQUI146FPM10 + EQUI150FPM10 + 0.01864 where:

Commented [A402]: Delete this requirement. Recordkeeping should be done at the EQUI level, not the STRU level.

Commented [A403]: Delete this requirement. Recordkeeping should be done at the EQUI level, not the STRU level.

Commented [A404]: Delete this requirement. See above: unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Requirement number	Requirement and citation
	STRU53PM10 = total daily average PM10 emissions emitted through STRU 53, in pounds/hour; EQUI146FPM10 = total daily average uncaptured PM10 emissions from EQUI 146, in pounds/hour; EQUI150FPM10 = total daily average uncaptured PM10 emissions from EQUI 150, in pounds/hour: and 0.01864 = total daily average PM10 emission contribution from EQUI 110 and EQUI 112, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.122.8	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 53 using the following equation: STRU53PM2.5 = EQUI146FPM2.5 + EQUI150FPM2.5 + 0.01864 where: STRU53PM2.5 = total daily average PM2.5 emissions emitted through STRU 53, in pounds/hour; EQUI146FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 146, in pounds/hour; EQUI150FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 150, in pounds/hour; and 0.01864 = total daily average PM10 emission contribution from EQUI 110 and EQUI 112, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.122.9	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 53 using the following equations: STRU53L = EQUI146FL + EQUI150FL STRU53L3A = [(STRU53L2 + STRU53L3 + STRU53L4 +...+ STRU53L91 + STRU53L92 + STRU53L93) - STRU53L1] / 92 days where: STRU53L# = total daily lead emissions emitted through STRU 53, in pounds/day; STRU53L3A = 92-day rolling average lead emissions emitted through STRU 53 for the previous 92-day period, in pounds/day; EQUI146FL = total uncaptured lead emissions from EQUI 146, in pounds/day; and EQUI150FL = total uncaptured lead emissions from EQUI 150, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.122.10	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 53 using the following equations: STRU53L = EQUI146FL + EQUI150FL STRU53L365S = (STRU53L2 + STRU53L3 + STRU53L4 +...+ STRU53L364 + STRU53L365 + STRU53L366) - STRU53L1 where: STRU53L# = total daily lead emissions emitted through STRU 53, in pounds/day; STRU53L365S = 365-day rolling sum lead emissions emitted through STRU 53 for the previous 365-day period, in pounds/year; EQUI146FL = total uncaptured lead emissions from EQUI 146, in pounds/day; and EQUI150FL = total uncaptured lead emissions from EQUI 150, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]

Commented [A405]: Delete this requirement. See above: unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Commented [A406]: Delete this requirement. See above: unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Commented [A407]: Delete this requirement. See above: unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Requirement number	Requirement and citation
5.122.11	The Permittee is prohibited from releasing emissions of pollutants through STRU 53 from any emission units other than EQUI 110, EQUI 112, EQUI 146 or EQUI 150 or EQUI 172 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 56	**Exhaust fan #14**
5.123.1	The Permittee shall limit emissions of PM < 10 micron <= 0.0429 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.123.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.0429 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.123.3	The Permittee shall limit emissions of Lead <= 0.00644 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.123.4	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 56 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 56 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.123.5	The Permittee shall limit emissions of Nitrogen Oxides <= 0.2453 pounds per hour 1-hour average This is the emission rate used in modeling and it represents the contributions from EQUI 110 and EQUI 112. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.123.6	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 56 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 56 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual die casting lead emissions from STRU 56 diecast emissions for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.123.7	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 56 using the following equation: STRU56PM10 = EQUI153FPM10 + EQUI157FPM10 + 0.01864 where: STRU56PM10 = total daily average PM10 emissions emitted through STRU 56, in pounds/hour; EQUI153FPM10 = total daily average uncaptured PM10 emissions from EQUI 153, in pounds/hour; EQUI157FPM10 = total daily average uncaptured PM10 emissions from EQUI 157, in pounds/hour; and 0.01864 = total daily average PM10 emission contribution from EQUI 110 and EQUI 112, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.123.8	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 56 using the following equation:

Commented [A408]: Delete this requirement. Recordkeeping should be done at the EQUI level, not the STRU level.

Commented [A409]: Delete this requirement. Recordkeeping should be done at the EQUI level, not the STRU level.

Commented [A410]: Delete this requirement. See above: unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Commented [A411]: Delete this requirement. See above: unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Requirement number	Requirement and citation
	STRU56PM2.5 = EQUI153FPM2.5 + EQUI157FPM2.5 + 0.01864 where: STRU56PM2.5 = total daily average PM2.5 emissions emitted through STRU 56, in pounds/hour; EQUI153FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 153, in pounds/hour; EQUI157FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 157, in pounds/hour; and 0.01864 = total daily average PM2.5 emission contribution from EQUI 110 and EQUI 112, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.123.9	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 56 using the following equations: STRU56L = EQUI153FL + EQUI157FL STRU56L3A = [(STRU56L2 + STRU56L3 + STRU56L4 +...+ STRU56L91 + STRU56L92 + STRU56L93) - STRU56L1] / 92 days where: STRU56L# = total daily lead emissions emitted through STRU 56, in pounds/day; STRU56L3A = 92-day rolling average lead emissions emitted through STRU 56 for the previous 92-day period, in pounds/day; EQUI153FL = total uncaptured lead emissions from EQUI 153, in pounds/day; and EQUI157FL = total uncaptured lead emissions from EQUI 157, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.123.10	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 56 using the following equations: STRU56L = EQUI153FL + EQUI157FL STRU56L365S = (STRU56L2 + STRU56L3 + STRU56L4 +...+ STRU56L364 + STRU56L365 + STRU56L366) - STRU56L1 where: STRU56L# = total daily lead emissions emitted through STRU 56, in pounds/day; STRU56L365S = 365-day rolling sum lead emissions emitted through STRU 56 for the previous 365-day period, in pounds/year; EQUI153FL = total uncaptured lead emissions from EQUI 153, in pounds/day; and EQUI157FL = total uncaptured lead emissions from EQUI 157, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.123.11	The Permittee is prohibited from releasing emissions of pollutants through STRU 56 from any emission units other than EQUI 110, EQUI 112, EQUI 153 or EQUI 157 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. (A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 57	**Shipping vent 20**
5.124.1	The Permittee shall limit emissions of PM < 10 micron <= 0.00109 pounds per hour 3-hour average This is the emission rate used in modeling and it represents controlled emissions at process capacity.

Commented [A412]: Delete this requirement. See above: unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Commented [A413]: Delete this requirement. See above: unnecessary requirement. To the extent these are retained, all of the Exhaust Fan emission formulas should be compared to the final Form GI-07.

Requirement number	Requirement and citation
	[Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.124.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.00109 pounds per hour 3-hour average This is the emission rate used in modeling and it represents controlled emissions at process capacity. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.124.3	The Permittee shall limit emissions of Lead <= 0.00002 pounds per day 3-hour average This is the emission rate used in modeling and it represents controlled emissions at capacity. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.124.4	The Permittee is prohibited from releasing emissions of pollutants through STRU 57 from any emission units other than EQUI 113 and EQUI 114 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. (A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 59	**Exhaust fan #12**
5.125.1	The Permittee is prohibited from releasing emissions of pollutants through STRU 59 from any emission units other than EQUI 174 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 68	**Melt Pot Room Vent**
5.126.1	The Permittee shall limit emissions of PM < 10 micron <= 0.01744 pounds per hour 3-hour average This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.126.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.01744 pounds per hour 3-hour average This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.126.3	The Permittee shall limit emissions of Lead <= 0.00000115 pounds per day 3-hour average This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.126.4	The Permittee shall limit emissions of Nitrogen Oxides <= 0.2294 pounds per hour 1-hour average This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.126.5	The Permittee is prohibited from releasing emissions of pollutants through STRU 68 from any emission units other than combustion emissions from EQUI 101, EQUI 102 and EQUI 104 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. (A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 69	**Doe Run Melt Pot Natural Gas Vent**
5.127.1	The Permittee shall limit emissions of PM < 10 micron <= 0.00373 pounds per hour 3-hour average This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.127.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.00373 pounds per hour 3-hour average This is the emission rate used in modeling and it represents uncontrolled emissions at process

Requirement number	Requirement and citation
	capacity. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.127.3	The Permittee shall limit emissions of Lead <= 0.00000025 pounds per day 3-hour average This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.127.4	The Permittee shall limit emissions of Nitrogen Oxides <= 0.04902 pounds per hour 1-hour average This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.127.5	The Permittee is prohibited from releasing emissions of pollutants through STRU 69 from any emission units other than combustion emissions from EQUI 103 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. (A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 70	**Natural Gas Bake Oven Stack**
5.128.1	The Permittee shall limit emissions of PM < 10 micron <= 0.00224 pounds per hour 3-hour average This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.128.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.00224 pounds per hour 3-hour average This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.128.3	The Permittee shall limit emissions of Lead <= 0.00000015 pounds per day 3-hour average This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.128.4	The Permittee shall limit emissions of Nitrogen Oxides <= 0.02941 pounds per hour 1-hour average This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.128.5	The Permittee is prohibited from releasing emissions of pollutants through STRU 70 from any emission units other than combustion emissions from EQUI 222 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. (A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 71	**Coining Booth Stacks**
5.129.1	The Permittee shall limit emissions of PM < 10 micron <= 0.0348 pounds per hour 3-hour average This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.129.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.0348 pounds per hour 3-hour average This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.129.3	The Permittee is prohibited from releasing emissions of pollutants through STRU 71 from any emission units other than EQUIs 223, 224, 225, 226, 227, 228, 229, 230, 231, and 232 without

Requirement number	Requirement and citation
	obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. (A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 72	**Fume Hood Vent**
5.130.1	The Permittee shall limit emissions of PM < 10 micron <= 0.006336 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.130.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.006336 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.130.3	Particulate Matter: Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 72 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 72 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.130.4	PM < 10 micron: PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 72 using the following equation: STRU72PM10 = EQUI240PM10 where: STRU72PM10 = total daily average PM10 emissions emitted through STRU 72 from EQUI 240, in pounds/hour; and EQUI240PM10 = total daily average PM10 emissions from EQUI 240, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.130.5	PM < 2.5 micron: PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 72 using the following equation: STRU72PM2.5 = EQUI240PM2.5 where: STRU72PM2.5 = total daily average PM2.5 emissions emitted through STRU 72 from EQUI 240, in pounds/hour; and EQUI240PM2.5 = total daily average PM2.5 emissions from EQUI 240, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.130.6	The Permittee is prohibited from releasing emissions of pollutants through STRU 72 from any emission units other than EQUI 240 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. (A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 73	**Battery Terminal Post Coater Stack**
5.131.1	The Permittee shall limit emissions of PM < 10 micron <= 0.01012 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

Requirement number	Requirement and citation
5.131.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.01012 pounds per hour daily average. [Minn. R. 7007.0080, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.131.3	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 73 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 73 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.131.4	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 73 using the following equation: STRU73PM10 = PM10UV + PM10VOC + PM10WB where: STRU73PM10 = total daily average PM10 emissions emitted through STRU 73 from all EQUIs in COMG 2, COMG 4, and COMG 8, in pounds/hour; PM10UV = total daily average PM10 emissions from all EQUIs in COMG 2, in pounds/hour; PM10VOC = total daily average PM10 emissions from all EQUIs in COMG 4, in pounds/hour; PM10WB = total daily average PM10 emissions from all EQUIs in COMG 8, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.131.5	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 73 using the following equations: STRU73PM2.5 = PM2.5UV + PM2.5VOC + PM2.5WB where: STRU73PM2.5 = total daily average PM2.5 emissions emitted through STRU 73 from all EQUIs in COMG 2, COMG 4, and COMG 8, in pounds/hour; PM2.5UV = total daily average PM2.5 emissions from COMG 2, in pounds/hour; PM2.5VOC = total daily average PM2.5 emissions from COMG 4, in pounds/hour; PM2.5WB = total daily average PM2.5 emissions from COMG 8, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 74	**Smog Hog #5 Stack**
5.132.1	The Permittee shall limit emissions of PM < 10 micron <= 0.02084 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.132.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.02084 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.132.3	The Permittee shall limit emissions of Lead <= 0.01233 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.132.4	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 74 for the previous operating day using the formulas specified in this permit; and

Requirement number	Requirement and citation
	2) The total daily average hourly PM2.5 emissions from STRU 74 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.132.5	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 74 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 74 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 74 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.132.6	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 74 using the following equation: STRU74PM10 = EQUI130PM10 + EQUI131PM10 where: STRU74PM10 = total daily average PM10 emissions emitted through STRU 74, in pounds/hour; EQUI130PM10 = total daily average PM10 stack emissions from EQUI 130, in pounds/hour; and EQUI131PM10 = total daily average PM10 stack emissions from EQUI 131, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.132.7	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 74 using the following equation: STRU74PM2.5 = EQUI130PM2.5 + EQUI131PM2.5 where: STRU74PM2.5 = total daily average PM2.5 emissions emitted through STRU 74, in pounds/hour; EQUI130PM2.5 = total daily average PM2.5 stack emissions from EQUI 130, in pounds/hour; and EQUI131PM2.5 = total daily average PM2.5 stack emissions from EQUI 131, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.132.8	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 74 the following equations: STRU74L = EQUI130L + EQUI130L STRU74L3A = [(STRU74L2 + STRU74L3 + STRU74L4 +.... + STRU74L91 + STRU74L92 + STRU74L93) - STRU74L1] / 92 days where: STRU74L# = total daily lead emissions emitted through STRU 74, in pounds/day; STRU74L3A = 92-day rolling average lead emissions emitted through STRU 74 for the previous 92-day period, in pounds/day; EQUI130L = total lead stack emissions from EQUI 130, in pounds/day; and EQUI131L = total lead stack emissions from EQUI 131, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.132.9	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 74 using the following equations:

Requirement number	Requirement and citation
	STRU74L = EQUI130L + EQUI131L STRU74L365S = (STRU74L2 + STRU74L3 + STRU74L4 +.... + STRU74L364 + STRU74L365 + STRU74L366) - STRU74L1 where: STRU74L# = total daily lead emissions emitted through STRU 74, in pounds/day; STRU74L365S = 365-day rolling sum lead emissions emitted through STRU 74 for the previous 365-day period, in pounds/year; EQUI130L = total lead stack emissions from EQUI 130, in pounds/day; and EQUI131L = total lead stack emissions from EQUI 131, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.132.10	The Permittee is prohibited from releasing emissions of pollutants through STRU 74 from any emission units other than EQUI 130 or EQUI 131 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 75	**Smog Hog #8 Stack**
5.133.1	The Permittee shall limit emissions of PM < 10 micron <= 0.03348 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.133.2	The Permittee shall limit emissions of PM < 2.5 micron <= 0.03348 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.133.3	The Permittee shall limit emissions of Lead <= 0.01980 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.133.4	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 75 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 75 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.133.5	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 75 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 75 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 75 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
5.133.6	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 75 using the following equation: STRU75PM10 = EQUI134PM10 + EQUI135PM10 where: STRU75PM10 = total daily average PM10 emissions emitted through STRU 75, in pounds/hour; EQUI134PM10 = total daily average PM10 stack emissions from EQUI 134, in pounds/hour; and

Requirement number	Requirement and citation
	EQUI135PM10 = total daily average PM10 stack emissions from EQUI 135, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.133.7	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 75 using the following equation: STRU75PM2.5 = EQUI134PM2.5 + EQUI135PM2.5 where: STRU75PM2.5 = total daily average PM2.5 stack emissions emitted through STRU 75, in pounds/hour; and EQUI134PM2.5 = total daily average PM2.5 stack emissions from EQUI 134, in pounds/hour; and EQUI135PM2.5 = total daily average PM2.5 stack emissions from EQUI 135, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
5.133.8	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 75 using the following equations: STRU75L = EQUI134L + EQUI135L STRU75L3A = [(STRU75L2 + STRU75L3 + STRU75L4 +...+ STRU75L91 + STRU75L92 + STRU75L93) - STRU75L1] / 92 days where: STRU75L# = total daily lead emissions emitted through STRU 75, in pounds/day; STRU75L3A = 92-day rolling average lead emissions emitted through STRU 75 for the previous 92-day period, in pounds/day; EQUI134L = total lead stack emissions from EQUI 134, in pounds/day; and EQUI135L = total lead stack emissions from EQUI 135, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.133.9	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 75 using the following equations: STRU75L = EQUI134L + EQUI135L STRU75L365S = (STRU75L2 + STRU75L3 + STRU75L4 + . . . + STRU75L364 + STRU75L365 + STRU75L366) - STRU21L1 where: STRU75L# = total daily lead emissions emitted through STRU 75, in pounds/day; STRU75L365S = 365-day rolling sum lead emissions emitted through STRU 75 for the previous 365-day period, in pounds/year; EQUI134L = total lead stack emissions from EQUI 134, in pounds/day; and EQUI135L = total lead stack emissions from EQUI 135, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
5.133.10	The Permittee is prohibited from releasing emissions of pollutants through STRU 75 from any emission units other than EQUI 134 or EQUI 135 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 1	**Smog Hog #15**

Requirement number	Requirement and citation
5.134.1	The Permittee shall vent controlled emissions from EQUIs 101, 102, 103, 104, and 221 as exhausted from TREA 60 to TREA 1 whenever EQUIs 101, 102, 103, 104, or 221 operate, and operate and maintain TREA 1 at all times that any emissions are vented to TREA 1. The Permittee shall document periods of non-operation of TREA 1 whenever EQUIs 101, 102, 103, 104, or 221 are operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.134.2	The Permittee shall comply with the requirements of COMG 11 whenever emissions are vented to TREA 1. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.134.3	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.134.4	~~Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]~~
5.134.5	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
5.134.6	~~Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]~~
5.134.7	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.134.8	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.134.9	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
5.134.10	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads,

Commented [A414]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Commented [A415]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Requirement number	Requirement and citation
	rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]
TREA 25	**Smog Hog #1**
5.135.1	The Permittee shall vent controlled emissions from EQUIs 121, 122, and 123 as exhausted from TREA 61 to TREA 25 whenever EQUIs 121, 122, or 123 operate, and operate and maintain TREA 25 at all times that any emissions are vented to TREA 25. The Permittee shall document periods of non-operation of TREA 25 whenever EQUIs 121, 122, or 123 are operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.135.2	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 25. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.135.3	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.135.4	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
5.135.5	~~Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]~~
5.135.6	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.135.7	~~Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]~~
5.135.8	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.135.9	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]

Commented [A416]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Commented [A417]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Requirement number	Requirement and citation
5.135.10	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]
TREA 26	**Smog Hog #2**
5.136.1	The Permittee shall vent controlled emissions from EQUIs 124, 125, 126 and 157 as exhausted from TREAs 62 and 63 to TREA 26 whenever EQUIs 124, 125, 126 or 157 operate, and operate and maintain TREA 26 at all times that any emissions are vented to TREA 26. The Permittee shall document periods of non-operation of TREA 42 whenever EQUIs 124, 125, 126 or 157 are operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.136.2	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 26. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.136.3	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.136.4	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
5.136.5	~~Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]~~
5.136.6	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.136.7	~~Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]~~
5.136.8	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.136.9	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of

Commented [A418]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Commented [A419]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Requirement number	Requirement and citation
	necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
5.136.10	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]
TREA 27	**Smog Hog #3**
5.137.1	The Permittee shall vent controlled emissions from EQUIs 127, 128, and 129 as exhausted from TREA 64 to TREA 27 whenever EQUIs 127, 128, or 129 operate, and operate and maintain TREA 27 at all times that any emissions are vented to TREA 27. The Permittee shall document periods of non-operation of TREA 27 whenever EQUIs 127, 128, or 129 are operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.137.2	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 27. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.137.3	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.137.4	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
5.137.5	~~Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]~~
5.137.6	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.137.7	~~Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]~~
5.137.8	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.137.9	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur:

Commented [A420]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Commented [A421]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Requirement number	Requirement and citation
	- any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
5.137.10	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]
TREA 30	**Smog Hog #6**
5.138.1	The Permittee shall vent controlled emissions from EQUIs 132 and 133 as exhausted from TREA 66 to TREA 30 whenever EQUIs 132 or 133 operate, and operate and maintain TREA 30 at all times that any emissions are vented to TREA 30. The Permittee shall document periods of non-operation of TREA 30 whenever EQUIs 132 or 133 are operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.138.2	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 30. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.138.3	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.138.4	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
5.138.5	~~Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]~~
5.138.6	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.138.7	~~Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]~~
5.138.8	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a

Commented [A422]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Commented [A423]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Requirement number	Requirement and citation
	written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.138.9	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
5.138.10	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]
TREA 33	**Smog Hog #9**
5.139.1	The Permittee shall vent controlled emissions from EQUI 136 as exhausted from TREA 68 to TREA 33 whenever EQUI 136 operates, and operate and maintain TREA 33 at all times that any emissions are vented to TREA 33. The Permittee shall document periods of non-operation of TREA 33 whenever EQUI 136 is operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.139.2	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 33. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.139.3	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.139.4	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
5.139.5	~~Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]~~
5.139.6	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.139.7	~~Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4 5]~~

Commented [A424]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Commented [A425]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Requirement number	Requirement and citation
5.139.8	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.139.9	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
5.139.10	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]
TREA 34	**Smog Hog #10**
5.140.1	The Permittee shall vent controlled emissions from EQUIs 137 and 138 as exhausted from TREA 69 to TREA 34 whenever EQUIs 137 or 138 operate, and operate and maintain TREA 34 at all times that any emissions are vented to TREA 34. The Permittee shall document periods of non-operation of TREA 34 whenever EQUIs 137 or 138 are operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.140.2	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 34. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.140.3	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.140.4	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
5.140.5	~~Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]~~
5.140.6	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]

Commented [A426]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Requirement number	Requirement and citation
5.140.7	~~Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]~~
5.140.8	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.140.9	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
5.140.10	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]
TREA 35	**Smog Hog #11**
5.141.1	The Permittee shall vent controlled emissions from EQUIs 139 and 140 as exhausted from TREA 70 to TREA 35 whenever EQUIs 139 or 140 operate, and operate and maintain TREA 35 at all times that any emissions are vented to TREA 35. The Permittee shall document periods of non-operation of TREA 35 whenever EQUIs 139 or 140 are operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.141.2	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 35. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.141.3	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.141.4	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
5.141.5	~~Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]~~

Commented [A427]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Commented [A428]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Requirement number	Requirement and citation
5.141.6	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.141.7	~~Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]~~
5.141.8	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.141.9	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
5.141.10	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]
TREA 36	**Smog Hog #12**
5.142.1	The Permittee shall vent controlled emissions from EQUIs 141, 142, 143, and 155 as exhausted from TREAs 71 and 72 to TREA 36 whenever EQUIs 141, 142, 143, or 155 operate, and operate and maintain TREA 36 at all times that any emissions are vented to TREA 36. The Permittee shall document periods of non-operation of TREA 36 whenever EQUIs 141, 142, 143, or 155 are operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.142.2	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 36. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.142.3	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.142.4	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]

Commented [A429]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Requirement number	Requirement and citation
5.142.5	~~Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]~~
5.142.6	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.142.7	~~Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]~~
5.142.8	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.142.9	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
5.142.10	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]
TREA 39	**Smog Hog #16**
5.143.1	The Permittee shall vent controlled emissions from EQUIs 146 and 158 as exhausted from TREA 73 to TREA 39 whenever EQUIs 146 or 158 operate, and operate and maintain TREA 39 at all times that any emissions are vented to TREA 39. The Permittee shall document periods of non-operation of TREA 39 whenever EQUIs 146 or 158 are operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.143.2	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 39. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.143.3	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]

Commented [A430]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Commented [A431]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Requirement number	Requirement and citation
5.143.4	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
5.143.5	~~Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]~~
5.143.6	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.143.7	~~Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]~~
5.143.8	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.143.9	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
5.143.10	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]
TREA 40	**Smog Hog #17**
5.144.1	The Permittee shall vent controlled emissions from EQUI 147 as exhausted from TREA 74 to TREA 40 whenever EQUI 147 operates, and operate and maintain TREA 40 at all times that any emissions are vented to TREA 40. The Permittee shall document periods of non-operation of TREA 40 whenever EQUI 147 is operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.144.2	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 40. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

Commented [A432]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Commented [A433]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Requirement number	Requirement and citation
5.144.3	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.144.4	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
5.144.5	~~Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]~~
5.144.6	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.144.7	~~Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4 5]~~
5.144.8	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.144.9	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
5.144.10	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]
TREA 41	**Smog Hog #18**
5.145.1	The Permittee shall vent controlled emissions from EQUIs 149 and 150 as exhausted from TREA 75 to TREA 41 whenever EQUIs 149 or 150 operate, and operate and maintain TREA 41 at all times that any emissions are vented to TREA 41. The Permittee shall document periods of non-operation of the control equipment TREA 41 whenever EQUIs 149 or 150 are operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

Commented [A434]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Commented [A435]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Requirement number	Requirement and citation
5.145.2	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 41. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.145.3	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.145.4	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
5.145.5	~~Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]~~
5.145.6	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.145.7	~~Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]~~
5.145.8	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.145.9	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
5.145.10	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]
TREA 42	**Smog Hog #19**
5.146.1	The Permittee shall vent emissions from EQUIs 152 and 156 as exhausted from TREA 76 to TREA 42 whenever EQUIs 152 or 156 operate, and operate and maintain TREA 42 at all times that any

Commented [A436]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Commented [A437]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Requirement number	Requirement and citation
	emissions are vented to TREA 42. The Permittee shall document periods of non-operation of TREA 42 whenever EQUIs 152 or 156 are operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.146.2	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 42. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.146.3	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.146.4	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
5.146.5	~~Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]~~
5.146.6	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.146.7	~~Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]~~
5.146.8	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.146.9	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
5.146.10	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]

Commented [A438]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Commented [A439]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Requirement number	Requirement and citation
TREA 43	**Smog Hog #20**
5.147.1	The Permittee shall vent controlled emissions from EQUIs 153 and 154 as exhausted from TREA 77 to TREA 43 whenever EQUIs 153 or 154 operate, and operate and maintain TREA 38 at all times that any emissions are vented to TREA 38. The Permittee shall document periods of non-operation of TREA 43 whenever EQUIs 153 or 154 are operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.147.2	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 43. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.147.3	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.147.4	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
5.147.5	~~Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]~~
5.147.6	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.147.7	~~Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]~~
5.147.8	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.147.9	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]

Commented [A440]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Commented [A441]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Requirement number	Requirement and citation
5.147.10	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]
TREA 52	**HEPA Filter - Tool Room 1 Abrasive Blasting**
5.148.1	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter >= 99.98 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.148.2	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron >= 99.98 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.148.3	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for PM < 2.5 micron >= 99.98 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.148.4	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for Lead >= 99.90 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.148.5	The Permittee shall vent emissions from EQUI 113 to TREA 52 whenever EQUI 113 operates, and operate and maintain TREA 52 at all times that any emissions are vented to TREA 52. The Permittee shall document periods of non-operation of the control equipment TREA 52 whenever EQUI 113 is operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.148.6	If the Permittee replaces TREA 52, the replacement control must meet or exceed the control efficiency requirements of TREA 52 as well as comply with all other requirements of TREA 52. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.148.7	The Permittee shall operate and maintain the HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.148.8	Daily Inspections: Once each operating day, the Permittee shall visually inspect the condition of each HEPA filter with respect to alignment, saturation, tears, holes and any other condition that may affect the filter's performance. The Permittee shall maintain a daily written record of filter inspections. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.148.9	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.148.10	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include

Commented [A442]: These are cartridge filter(s) not susceptible to damage. The unit is infrequently used. Delete this requirement.

Commented [A443]: Same comment as above.

Requirement number	Requirement and citation
	completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 53	**HEPA Filter - Tool Room 2 Abrasive Blasting**
5.149.1	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter >= 99.98 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.149.2	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron >= 99.98 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.149.3	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for PM < 2.5 micron >= 99.98 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.149.4	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for Lead >= 99.90 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.149.5	The Permittee shall vent emissions from EQUI 114 to TREA 53 whenever EQUI 114 operates, and operate and maintain TREA 53 at all times that any emissions are vented to TREA 53. The Permittee shall document periods of non-operation of the control equipment TREA 53 whenever EQUI 114 is operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.149.6	If the Permittee replaces TREA 53, the replacement control must meet or exceed the control efficiency requirements of TREA 53 as well as comply with all other requirements of TREA 53. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.149.7	The Permittee shall operate and maintain the HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.149.8	Daily Inspections: Once each operating day, the Permittee shall visually inspect the condition of each HEPA filter with respect to alignment, saturation, tears, holes and any other condition that may affect the filter's performance. The Permittee shall maintain a daily written record of filter inspections. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.149.9	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.149.10	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include

Commented [A444]: These are cartridge filter(s) not susceptible to damage. The unit is infrequently used. Delete this requirement.

Commented [A445]: Same comment as above.

Requirement number	Requirement and citation
	completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 54	**HEPA Filter - DC Abrasive Blasting**
5.150.1	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter >= 99.98 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.150.2	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron >= 99.98 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.150.3	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for PM < 2.5 micron >= 99.98 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.150.4	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for Lead >= 99.90 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.150.5	The Permittee shall vent emissions from EQUI 115 to TREA 54 whenever EQUI 115 operates, and operate and maintain TREA 54 at all times that any emissions are vented to TREA 54. The Permittee shall document periods of non-operation of the control equipment TREA 54 whenever EQUI 115 is operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.150.6	If the Permittee replaces TREA 54, the replacement control must meet or exceed the control efficiency requirements of TREA 54 as well as comply with all other requirements of TREA 54. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.150.7	The Permittee shall operate and maintain the HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.150.8	Daily Inspections: Once each operating day, the Permittee shall visually inspect the condition of each HEPA filter with respect to alignment, saturation, tears, holes and any other condition that may affect the filter's performance. The Permittee shall maintain a daily written record of filter inspections. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.150.9	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.150.10	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include

Commented [A446]: These are cartridge filter(s) not susceptible to damage. The unit is infrequently used. Delete this requirement.

Commented [A447]: Same comment as above.

Requirement number	Requirement and citation
	completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 55	**HEPA Filter - EQUI 84**
5.151.1	The Permittee shall operate and maintain control equipment such that it meets the requirements of COMG 14. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.151.2	The Permittee shall vent emissions from EQUI 84 to TREA 55 whenever EQUI 84 operates, and operate and maintain TREA 55 at all times that any emissions are vented to TREA 55. The Permittee shall document periods of non-operation of the control equipment TREA 55 whenever EQUI 84 is operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.151.3	If the Permittee replaces TREA 55, the replacement control must meet or exceed the control efficiency requirements of COMG 14 as well as comply with all other requirements of COMG 14. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 56	**HEPA Filter - EQUI 88**
5.152.1	The Permittee shall operate and maintain control equipment such that it meets the requirements of COMG 14. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.152.2	The Permittee shall vent emissions from EQUI 88 to TREA 56 whenever EQUI 88 operates, and operate and maintain TREA 56 at all times that any emissions are vented to TREA 56. The Permittee shall document periods of non-operation of the control equipment TREA 56 whenever EQUI 88 is operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.152.3	If the Permittee replaces TREA 56, the replacement control must meet or exceed the control efficiency requirements of COMG 14 as well as comply with all other requirements of COMG 14. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 57	**HEPA Filter - EQUI 95**
5.153.1	The Permittee shall operate and maintain control equipment such that it meets the requirements of COMG 14. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.153.2	The Permittee shall vent emissions from EQUI 95 to TREA 57 whenever EQUI 95 operates, and operate and maintain TREA 57 at all times that any emissions are vented to TREA 57. The Permittee

Requirement number	Requirement and citation
	shall document periods of non-operation of the control equipment TREA 57 whenever EQUI 95 is operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.153.3	If the Permittee replaces TREA 57, the replacement control must meet or exceed the control efficiency requirements of COMG 14 as well as comply with all other requirements of COMG 14. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 58	**HEPA Filter - EQUI 219**
5.154.1	The Permittee shall operate and maintain control equipment such that it meets the requirements of COMG 14. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.154.2	The Permittee shall vent emissions from EQUI 219 to TREA 58 whenever EQUI 219 operates, and operate and maintain TREA 58 at all times that any emissions are vented to TREA 58. The Permittee shall document periods of non-operation of the control equipment TREA 58 whenever EQUI 219 is operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.154.3	If the Permittee replaces TREA 58, the replacement control must meet or exceed the control efficiency requirements of COMG 14 as well as comply with all other requirements of COMG 14. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 59	**HEPA Filter - EQUI 220**
5.155.1	The Permittee shall operate and maintain control equipment such that it meets the requirements of COMG 14. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.155.2	The Permittee shall vent emissions from EQUI 220 to TREA 59 whenever EQUI 220 operates, and operate and maintain TREA 59 at all times that any emissions are vented to TREA 59. The Permittee shall document periods of non-operation of the control equipment TREA 59 whenever EQUI 220 is operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.155.3	If the Permittee replaces TREA 59, the replacement control must meet or exceed the control efficiency requirements of COMG 14 as well as comply with all other requirements of COMG 14. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R.

Requirement number	Requirement and citation
	7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 60	**Nederman Filter 15N - STRU 1**
5.156.1	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.156.2	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.156.3	The Permittee shall vent emissions from EQUIs 101, 102, 103, 104, and 221 to TREA 60 whenever EQUIs 101, 102, 103, 104, or 221 are operating, and operate and maintain TREA 60 at all times that any emissions are vented to TREA 60. The Permittee shall document periods of non-operation of the control equipment TREA 60 whenever EQUI 101, 102, 103, 104, or 221 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.156.4	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.156.5	The Permittee shall comply with the requirements of COMG 11 whenever emissions are vented to TREA 60. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.156.6	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.156.7	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.156.8	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.156.9	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall

Requirement number	Requirement and citation
	keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 61	**Nederman Filter 1N - STRU 15**
5.157.1	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.157.2	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.157.3	The Permittee shall vent emissions from EQUIs 121, 122, and 123 to TREA 61 whenever EQUIs 121, 122, or 123 are operating, and operate and maintain TREA 61 at all times that any emissions are vented to TREA 61. The Permittee shall document periods of non-operation of the control equipment TREA 61 whenever EQUIs 121, 122, or 123 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.157.4	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.157.5	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 61. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.157.6	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.157.7	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.157.8	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.157.9	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall

Requirement number	Requirement and citation
	keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 62	**Nederman Filter 2N1 - STRU 16**
5.158.1	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.158.2	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.158.3	The Permittee shall vent emissions from EQUIs 126 and 157 to TREA 62 whenever EQUIs 126 or 157 are operating, and operate and maintain TREA 62 at all times that any emissions are vented to TREA 62. The Permittee shall document periods of non-operation of the control equipment TREA 62 whenever EQUIs 126 or 157 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.158.4	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 62. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.158.5	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.158.6	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.158.7	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.158.8	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.158.9	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall

Requirement number	Requirement and citation
	keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 63	**Nederman Filter 2N2 - STRU 16**
5.159.1	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.159.2	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.159.3	The Permittee shall vent emissions from EQUIs 124 and 125 to TREA 63 whenever EQUIs 124 or 125 are operating, and operate and maintain TREA 63 at all times that any emissions are vented to TREA 63. The Permittee shall document periods of non-operation of the control equipment TREA 63 whenever EQUIs 124 or 125 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.159.4	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 63. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.159.5	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.159.6	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.159.7	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.159.8	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.159.9	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall

Requirement number	Requirement and citation
	keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 64	**Nederman Filter 3N - STRU 17**
5.160.1	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.160.2	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.160.3	The Permittee shall vent emissions from EQUIs 127, 128 and 129 to TREA 64 whenever EQUIs 127, 128 or 129 are operating, and operate and maintain TREA 64 at all times that any emissions are vented to TREA 64. The Permittee shall document periods of non-operation of the control equipment TREA 64 whenever EQUIs 127, 128 or 129 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.160.4	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 64. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.160.5	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.160.6	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.160.7	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.160.8	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.160.9	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall

Requirement number	Requirement and citation
	keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 65	**Nederman Device 5N - STRU 74**
5.161.1	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.161.2	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.161.3	The Permittee shall vent emissions from EQUIs 130 and 131 to TREA 65 whenever EQUIs 130 or 131 are operating, and operate and maintain TREA 65 at all times that any emissions are vented to TREA 65. The Permittee shall document periods of non-operation of the control equipment TREA 65 whenever EQUIs 130 or 131 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.161.4	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 65. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.161.5	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.161.6	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.161.7	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.161.8	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.161.9	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall

Requirement number	Requirement and citation
	keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 66	**Nederman Filter 6N - STRU 20**
5.162.1	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.162.2	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.162.3	The Permittee shall vent emissions from EQUIs 132 and 133 to TREA 66 whenever EQUIs 132 or 133 are operating, and operate and maintain TREA 66 at all times that any emissions are vented to TREA 66. The Permittee shall document periods of non-operation of the control equipment TREA 66 whenever EQUIs 132 or 133 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.162.4	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 66. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.162.5	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.162.6	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.162.7	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.162.8	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.162.9	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall

Requirement number	Requirement and citation
	keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 67	**Nederman Device 8N - STRU 75**
5.163.1	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.163.2	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.163.3	The Permittee shall vent emissions from EQUIs 134 and 135 to TREA 67 whenever EQUIs 134 or 135 are operating, and operate and maintain TREA 67 at all times that any emissions are vented to TREA 67. The Permittee shall document periods of non-operation of the control equipment TREA 67 whenever EQUIs 134 or 135 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.163.4	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 67. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.163.5	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.163.6	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.163.7	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.163.8	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.163.9	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall

Requirement number	Requirement and citation
	keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 68	**Nederman Filter 9N - STRU 23**
5.164.1	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.164.2	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.164.3	The Permittee shall vent emissions from EQUI 136 to TREA 68 whenever EQUI 136 is operating, and operate and maintain TREA 68 at all times that any emissions are vented to TREA 68. The Permittee shall document periods of non-operation of the control equipment TREA 68 whenever EQUI 136 is operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.164.4	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 68. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.164.5	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.164.6	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.164.7	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.164.8	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.164.9	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]

Requirement number	Requirement and citation
TREA 69	**Nederman Filter 10N - STRU 24**
5.165.1	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.165.2	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.165.3	The Permittee shall vent emissions from EQUIs 137 and 138 to TREA 69 whenever EQUIs 137 or 138 are operating, and operate and maintain TREA 69 at all times that any emissions are vented to TREA 69. The Permittee shall document periods of non-operation of the control equipment TREA 69 whenever EQUIs 137 or 138 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.165.4	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 69. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.165.5	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.165.6	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.165.7	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.165.8	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.165.9	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]

Requirement number	Requirement and citation
TREA 70	**Nederman Filter 11N - STRU 25**
5.166.1	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.166.2	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.166.3	The Permittee shall vent emissions from EQUIs 139 and 140 to TREA 70 whenever EQUIs 139 or 140 are operating, and operate and maintain TREA 70 at all times that any emissions are vented to TREA 70. The Permittee shall document periods of non-operation of the control equipment TREA 70 whenever EQUIs 139 or 140 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.166.4	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 70. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.166.5	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.166.6	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.166.7	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.166.8	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.166.9	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]

Requirement number	Requirement and citation
TREA 71	**Nederman Filter 12N1 - STRU 26**
5.167.1	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.167.2	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.167.3	The Permittee shall vent emissions from EQUIs 141 and 143 to TREA 71 whenever EQUIs 141 or 143 are operating, and operate and maintain TREA 71 at all times that any emissions are vented to TREA 71. The Permittee shall document periods of non-operation of the control equipment TREA 71 whenever EQUIs 141 or 143 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.167.4	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 71. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.167.5	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.167.6	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.167.7	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.167.8	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.167.9	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]

Requirement number	Requirement and citation
TREA 72	**Nederman Filter 12N2 - STRU 26**
5.168.1	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.168.2	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.168.3	The Permittee shall vent emissions from EQUIs 142 and 155 to TREA 72 whenever EQUIs 142 or 155 are operating, and operate and maintain TREA 72 at all times that any emissions are vented to TREA 72. The Permittee shall document periods of non-operation of the control equipment TREA 72 whenever EQUIs 142 or 155 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.168.4	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 72. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.168.5	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.168.6	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.168.7	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.168.8	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.168.9	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]

Requirement number	Requirement and citation
TREA 73	**Nederman Filter 16N - STRU 30**
5.169.1	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.169.2	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.169.3	The Permittee shall vent emissions from EQUIs 146 and 158 to TREA 73 whenever EQUIs 146 or 158 are operating, and operate and maintain TREA 73 at all times that any emissions are vented to TREA 73. The Permittee shall document periods of non-operation of the control equipment TREA 73 whenever EQUIs 146 or 158 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.169.4	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 73. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.169.5	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.169.6	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.169.7	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.169.8	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.169.9	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]

Requirement number	Requirement and citation
TREA 74	**Nederman Filter 17N - STRU 31**
5.170.1	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.170.2	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.170.3	The Permittee shall vent emissions from EQUI 147 to TREA 74 whenever EQUI 147 is operating, and operate and maintain TREA 74 at all times that any emissions are vented to TREA 74. The Permittee shall document periods of non-operation of the control equipment TREA 74 whenever EQUI 147 is operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.170.4	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 74. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.170.5	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.170.6	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.170.7	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.170.8	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.170.9	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 75	**Nederman Filter 18N - STRU 32**

Requirement number	Requirement and citation
5.171.1	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.171.2	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.171.3	The Permittee shall vent emissions from EQUIs 149 and 150 to TREA 75 whenever EQUIs 149 or 150 are operating, and operate and maintain TREA 75 at all times that any emissions are vented to TREA 75. The Permittee shall document periods of non-operation of the control equipment TREA 75 whenever EQUIs 149 or 150 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.171.4	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 75. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.171.5	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.171.6	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.171.7	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.171.8	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.171.9	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 76	**Nederman Filter 19N - STRU 33**

Requirement number	Requirement and citation
5.172.1	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.172.2	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.172.3	The Permittee shall vent emissions from EQUIs 152 and 156 to TREA 76 whenever EQUIs 152 or 156 are operating, and operate and maintain TREA 76 at all times that any emissions are vented to TREA 76. The Permittee shall document periods of non-operation of the control equipment TREA 76 whenever EQUIs 152 or 156 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.172.4	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 76. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.172.5	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.172.6	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.172.7	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.172.8	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.172.9	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 77	**Nederman Filter 20N - STRU 34**

Requirement number	Requirement and citation
5.173.1	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.173.2	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours during operations. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.173.3	The Permittee shall vent emissions from EQUIs 153 and 154 to TREA 77 whenever EQUIs 153 or 154 are operating, and operate and maintain TREA 77 at all times that any emissions are vented to TREA 77. The Permittee shall document periods of non-operation of the control equipment TREA 77 whenever EQUIs 153 or 154 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.173.4	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 77. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.173.5	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.173.6	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
5.173.7	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.173.8	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.173.9	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 78	**Smog Hog #5**

Requirement number	Requirement and citation
5.174.1	The Permittee shall vent controlled emissions from EQUIs 130 and 131 as exhausted from TREA 65 to TREA 78 whenever EQUIs 130 or 131 operate, and operate and maintain TREA 78 at all times that any emissions are vented to TREA 78. The Permittee shall document periods of non-operation of TREA 78 whenever EQUIs 130 or 131 are operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.174.2	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 78. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.174.3	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.174.4	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
5.174.5	~~Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times.~~ [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.174.6	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.174.7	~~Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]~~
5.174.8	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.174.9	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
5.174.10	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads,

Commented [A448]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Commented [A449]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Requirement number	Requirement and citation
	rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]
TREA 79	**Smog-Hog #8**
5.175.1	The Permittee shall vent controlled emissions from EQUIs 134 and 135 as exhausted from TREA 67 to TREA 79 whenever EQUIs 134 or 135 operate, and operate and maintain TREA 79 at all times that any emissions are vented to TREA 79. The Permittee shall document periods of non-operation of TREA 79 whenever EQUIs 134 or 135 are operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.175.2	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 79. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
5.175.3	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
5.175.4	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
5.175.5	~~Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]~~
5.175.6	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.175.7	~~Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]~~
5.175.8	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
5.175.9	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]

Commented [A450]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Commented [A451]: This requirement is not necessary and not workable. The Nederman filter provides control for the diecast operations. The smog hogs are already required to be on during operations.

Requirement number	Requirement and citation
5.175.10	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]

6. Submittal/action requirements

This section lists most of the submittals required by this permit. Please note that some submittal requirements may appear in the Limits and Other Requirements section, or, if applicable, within a Compliance Schedule section.

Requirement number	Requirement and citation
TFAC 1	**Water Gremlin Co**
6.1.1	The Permittee must submit a semiannual deviations report: Due semiannually, by the 30th of January and July. The first semiannual report submitted by the Permittee must cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. Submit this on form DRF-2 (Deviation Reporting Form). If no deviations have occurred, submit the signed report certifying that there were no deviations. [Minn. R. 7007.0800, subp. 6(A), Minn. R. 7007.0800, subp. 6(B)(2)]
6.1.2	The Permittee must submit a compliance certification: Due annually, by the 31st of January (for the previous calendar year). Submit this on form CR-04 (Annual Compliance Certification Report). This report covers all deviations experienced during the calendar year. If no deviations have occurred, submit the signed report certifying that there were no deviations. [Minn. R. 7007.0800, subp. 6(A), Minn. R. 7007.0800, subp. 6(D)]
6.1.3	The Permittee shall submit an annual report by the 31st of January. The report shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). The report shall describe the changes made at the facility resulting in an increase in regulated air emissions during the previous calendar year using the latest MPCA application forms. The report shall include information for any new, modified, or replaced Subject Items in the form of a revised Attachment 2 - Subject Item Summary. The report shall include the increased changes in emissions of any pollutants that have been listed as chemicals of potential interest (COPI) based on the current Air Emission Risk Analysis (AERA) Guidance. The description of the change must include the change in emissions and identification of the emission source that changed. The report shall be submitted with the annual Compliance Certification required by this permit. As part of the Annual Report, the Permittee shall verify and certify that the facility has maintained minor source status for New Source Review. [Minn. R. 7007.0500, subp. 3, Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
6.1.4	~~The Permittee shall submit a monthly Ambient Air Monitoring Report: due within 30 calendar days following the last day of each month after Initial Startup of the VOC monitors in accordance with the MPCA-approved Monitoring Plan. The report shall be certified by the responsible official as defined in Minn.R. 7007.0100, subp. 21(A). The VOC monitoring results shall be submitted to AQRoutineReport@pca.state.mn.us within 30 calendar days following the last day of the month following startup of the VOC monitors. [Minn. R. 7007.0800, subps. 5-6]~~
6.1.5	The Permittee shall submit excess emission/downtime report: Due 30 days after the end of each calendar quarter following permit issuance. Submit this on form DRF-1 (Excess Emissions Reporting) as amended. The EER shall indicate all periods of monitor bypass and exceedances of the limit including those allowed by an applicable standard, i.e. during startup, shutdown, and malfunctions, as well as a summary of audit results and frequencies. If no excess emissions, downtime or bypasses

Commented [A452]: See the comment letter. Ambient monitoring requirement should be removed.

Requirement number	Requirement and citation
	occurred during the quarter, submit a signed report supplying the necessary monitor data needed to verify this. [Minn. R. 7017.1110, subps. 1-2]
6.1.6	~~The Permittee shall submit a notification of the actual Date of Initial Startup due 15 calendar days after Initial Startup Date of the VOC monitors, as described in the approved revised ambient air monitoring plan. [Minn. R. 7007.0800, subp. 6]~~
6.1.7	~~The Permittee shall submit a 1,2 (trans-) Dichloroethylene VOC Solvent Usage Report due within 30 calendar days following the last day of each month. The report shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). The t-DCE VOC solvent usage report shall include tons per month of t-DCE containing solvent used and tons per month of t-DCE VOC emissions from 1,2 (trans-) Dichloroethylene containing solvent used. The report shall include any audit of t-DCE VOC solvent usage conducted during that month as a result of the t-DCE Quarterly Purchase Audit required elsewhere in this permit. The report shall be submitted to AQRoutineReport@pca.state.mn.us. This requirement to report on a monthly basis expires when MPCA approves discontinuation of VOC Ambient Air Monitoring. [Minn. R. 7007.0500, subp. 3, Minn. R. 7007.0800, subps. 5-6]~~
6.1.8	~~The Permittee shall submit a VOC Continuous Emission Monitor Report due within 30 calendar days following the last day of each month. The report shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). The VOC Continuous Emission Monitor report shall report daily emissions as measured ppmv Wet of Total Hydrocarbon Concentration as 1,2 (trans-) Dichloroethylene based on daily CEM readings. The report shall include any audit of t-DCE VOC solvent usage conducted during that month as a result of the Reconciliation of Predicted Stack Concentration and CEMS Readings required elsewhere in this permit. The report shall be submitted to AQRoutineReport@pca.state.mn.us. This requirement to report on a monthly basis expires when MPCA approves discontinuation of VOC Ambient Air Monitoring. [Minn. R. 7007.0500, subp. 3, Minn. R. 7007.0800, subps. 5-6, Minn. Stat. 116.07, subd. 9(2)]~~
COMG 1	**VOC and 1,2 (trans) Dichloroethylene Limits and VOC Coater, Water-Based Coater, UV Coater, and Solvent Distillation Operation Requirements.**
6.2.1	~~The Permittee shall submit an annual report by the 31st of January. The report shall document the VOC 365-day rolling sum calculations for the previous calendar year. The report shall be submitted with the annual Compliance Certification required by this permit. As part of the Annual Report, the Permittee shall verify and certify that the Facility has maintained minor source status for PSD and Part 70. [Minn. R. 7007.0800, subp. 2(A)]~~
6.2.2	The Permittee shall submit a notification: Due 30 calendar days before addition, replacement, or conversion of coaters authorized under COMG 1. The notification shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). The notification shall include the planned date for beginning of operations and the following forms: 1) Coaters not required to comply with COMG 5: MPCA forms GI-02, GI-03, GI-04 and GI-05B 2) Coaters required to comply with COMG 5: MPCA forms GI-05B and GI-05A, if control equipment is required under COMG 2, COMG 4 or COMG 8. [Minn. R. 7007.0500, subp. 3, Minn. R. 7007.0800, subps. 5-6]
6.2.3	The Permittee shall submit an annual report by the 31st of January. The report shall document the 1,2-(trans-) Dichloroethylene VOC 365-day rolling sum calculations for the previous calendar year. The report shall include the results of the 1,2-(trans-) Dichloroethylene VOC Quarterly Purchase Audits required elsewhere in this permit. The report shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). The report shall be submitted with the annual Compliance Certification required by this permit. As part of the Annual Report, the Permittee shall verify and certify that the Facility has maintained minor source status for PSD and Part 70. [Minn. R. 7007.0500, subp. 3, Minn. R. 7007.0800, subp. 2]

Commented [A453]: See the comment letter. Ambient monitoring requirement should be removed.

Commented [A454]: See the comment letter. Ambient monitoring requirement should be removed, along with this requirement.

Commented [A455]: See the comment letter. The ambient monitoring requirement should be removed.

Commented [A456]: Delete this requirement. These data are provided elsewhere through other requirements. This is redundant.

Requirement number	Requirement and citation
6.2.4	The Permittee shall submit a notification due 30 calendar days before replacement of control equipment authorized under COMG 11. The notification shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). The notification shall include the planned date for beginning of operations and form~~s~~ GI-05A. [Minn. R. 7007.0500, subp. 3, Minn. R. 7007.0800, subps. 5-6]
6.2.5	The Permittee shall submit a notification due 30 calendar days before replacement of control equipment authorized under COMG 12. The notification shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). The notification shall include the planned date for beginning of operations and form~~s~~ GI-05A. [Minn. R. 7007.0500, subp. 3, Minn. R. 7007.0800, subps. 5-6]
6.2.6	The Permittee shall submit a notification due 30 calendar days before replacement of control equipment authorized under COMG 14. The notification shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). The notification shall include the planned date for beginning of operations and form~~s~~ GI-05A. [Minn. R. 7007.0500, subp. 3, Minn. R. 7007.0800, subps. 5-6]
COMG 5	**Permanent Total Enclosure Requirements: Coating Rooms**
6.3.1	Weekly Reporting: The Permittee shall submit a weekly report due by 4:30pm on Friday each week that includes pressure drop readings, the door status, and daily alarm verification for each coating room in COMG 5. The report shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). The report shall be submitted to AQRoutineReport@pca.state.mn.us and must include any deviation from the approved minimum pressure drop, and/or door status, the actions taken to evaluate the reasons for the deviation, and the corrective actions taken to resolve the deviations. [Minn. R. 7007.0500, subp. 3, Minn. R. 7007.0800, subp. 2(A) & (B)]
6.3.2	The Permittee shall conduct a performance test due within 30 days of permit issuance and every 12 months thereafter to determine if each coating room in COMG 5 is a permanent total enclosure that meets the criteria of Method 204 of appendix M to 40 CFR pt. 51. The first test is due by the date specified above and all subsequent tests shall be completed every 12 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Method 204, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a Notice of Compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
6.3.3	The Permittee shall submit a report due monthly by the 15th of every month. The report shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). The report shall be submitted to AQRoutineReport@pca.state.mn.us and must contain the following: 1) Floor degradation discovered in the past month; and 2) Description of all corrective actions. [Minn. R. 7007.0500, subp. 3, Minn. R. 7007.0800, subp. 2(A) & (B)]
EQUI 120	**Emergency Generator Engine**
6.4.1	The Permittee shall submit a notification of date construction began: Due 30 calendar days after Date of Construction Start (or reconstruction). The report shall be certified by the responsible official as

Commented [A457]: Redundant to conduct frequent testing as the negative pressure alarms from 6.3.1 are sufficient.

Commented [A458]: The emergency generator is already installed and operating. The listed requirements in this section are not appropriate.

Requirement number	Requirement and citation
	defined in Minn. R. 7007.0100, subp. 21(A). Submit the name and number of the Subject Item and the date construction began. The notification shall be submitted electronically on Form CS-02. [40 CFR 60.7(a)(1), Minn. R. 7007.0500, subp. 3, Minn. R. 7019.0100, subp. 1]
6.4.2	The Permittee shall submit a notification of the actual date of initial startup: Due 15 calendar days after Initial Startup Date. The report shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). The notification shall be submitted electronically on Form CS-02. [40 CFR 60.7(a)(3), Minn. R. 7007.0500, subp. 3, Minn. R. 7019.0100, subp. 1]
6.4.3	The Permittee shall submit a notification of anticipated date for conducting opacity observations: Due 30 calendar days before Opacity Observation Date. The report shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). [40 CFR 60.7(a)(6), Minn. R. 7007.0500, subp. 3, Minn. R. 7019.0100, subp. 1]
6.4.4	The Permittee shall submit notification of the date construction of replacement began: Due 60 calendar days before Date of Construction or Replacement (or as soon as practicable). The report shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). Submit the information specified in 40 CFR Section 60.15(d)(1) through (7). The notification shall be submitted electronically on Form CS-02. [40 CFR 60.15(d), Minn. R. 7007.0500, subp. 3, Minn. R. 7011.0050]
~~EQUI 176~~	~~VOC CEMS (STRU 73)~~
6.5.1	~~The Permittee shall submit start-up notification: Due 10 working days after Startup of Monitor Date. The report shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). The notification shall be submitted electronically on Form CS-02. [Minn. R. 7007.0500, subp. 3, Minn. R. 7007.0800, subp. 2(A)]~~
6.5.2	~~The Permittee shall conduct CEMS cylinder gas audit (CGA): Due by the end of every second QA operating quarter (calendar quarter in which there are at least 168 unit operating hours) except that a CGA is not required during any quarter in which a RATA is performed. The initial CGA must be performed within 180 days following certification of the CEMS. The CGAs shall be conducted according to the procedures outlined in Minn. R. 7017.1170, subp 4a(A). If the monitored emission unit is not in operation on the CGA due date, the owner or operator has a grace period of 168 operating hours to perform the CGA. [Minn. R. 7017.1170, subp. 4a]~~
6.5.3	~~The Permittee shall conduct a relative accuracy test audit: Due by the end of every fourth QA operating quarter (calendar quarter in which there are at least 168 unit operating hours). RATAs shall be conducted and frequency may be reduced according to the procedures outlined in Minn. R. 7017.1170, subp. 5a. If the monitored emission unit is not in operation on the RATA due date, the owner or operator has a grace period of 720 operating hours to perform the RATA. [Minn. R. 7017.1170, subp. 5a]~~
6.5.4	~~Installation Notification: due 60 days before installing the continuous emissions monitoring system. The notification shall include plans and drawings of the system. Additionally, the notification shall include manufacture, model, parameter, and serial numbers of the continuous emissions monitoring system. [Minn. R. 7017.1040, subp. 1]~~
STRU 1	**Smog Hog #15 Stack**
6.6.1	Particulate Matter: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 11. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or

Commented [A459]: Delete the CEMS requirement. CEMS for STRU73 is not necessary nor useful. See comment letter for further information.

Commented [A460]: Not necessary to test each and every Smog Hog stack.

Requirement number	Requirement and citation
	Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.6.2	PM < 10 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 11. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.6.3	PM < 2.5 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 11.

Requirement number	Requirement and citation
	The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.6.4	Lead: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 11. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.6.5	Particulate Matter: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or

Requirement number	Requirement and citation
	Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.6.6	PM < 10 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.6.7	PM < 2.5 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test.

Requirement number	Requirement and citation
	Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, ubd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.6.8	Lead: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. (A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 15	**Smog Hog #1 Stack**
6.7.1	PM < 10 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day)

Commented [A461]: Not necessary to test each and every Smog Hog stack.

Requirement number	Requirement and citation
	based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.7.2	Particulate Matter: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, ubps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.7.3	PM < 2.5 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test.

Requirement number	Requirement and citation
	Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.7.4	Lead: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
6.7.5	Particulate Matter: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter.

Requirement number	Requirement and citation
	If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.7.6	PM < 10 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.7.7	PM < 2.5 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter.

Requirement number	Requirement and citation
	If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.7.8	Lead: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. (A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 16	**Smog Hog #2 Stack**
6.8.1	PM < 10 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for

Commented [A462]: Not necessary to test each and every Smog Hog stack.

Requirement number	Requirement and citation
	an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.8.2	Particulate Matter: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.8.3	PM < 2.5 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter.

Requirement number	Requirement and citation
	If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.8.4	Lead: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
6.8.5	Particulate Matter: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major

Requirement number	Requirement and citation
	amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.8.6	PM < 10 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.8.7	PM < 2.5 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit.

Requirement number	Requirement and citation
	The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a) , To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.8.8	Lead: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. (A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 17	**Smog Hog #3 Stack**
6.9.1	PM < 10 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit.

Commented [A463]: Not necessary to test each and every Smog Hog stack.

Requirement number	Requirement and citation
	The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.9.2	Particulate Matter: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.9.3	PM < 2.5 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit.

Requirement number	Requirement and citation
	The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.9.4	Lead: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
6.9.5	Particulate Matter: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005,

Requirement number	Requirement and citation
	subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.9.6	PM < 10 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.9.7	PM < 2.5 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference

Requirement number	Requirement and citation
	Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.9.8	Lead: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. (A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 20	**Smog Hog #6 Stack**
6.10.1	Particulate Matter: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPAReference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The

Commented [A464]: Not necessary to test each and every Smog Hog stack.

Requirement number	Requirement and citation
	operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.10.2	PM < 10 micron: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.10.3	PM < 2.5 micron: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference

Requirement number	Requirement and citation
	Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.10.4	Lead: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
6.10.5	Particulate Matter: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in

Requirement number	Requirement and citation
	Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.10.6	PM < 10 micron: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.10.7	PM < 2.5 micron: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E.

Requirement number	Requirement and citation
	Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.10.8	Lead: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 23	**Smog Hog #9 Stack**
6.11.1	Particulate Matter: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E.

Commented [A465]: Not necessary to test each and every Smog Hog stack.

Requirement number	Requirement and citation
	Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.11.2	PM < 10 micron: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.11.3	PM < 2.5 micron: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E.

Requirement number	Requirement and citation
	Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.11.4	Lead: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
6.11.5	Particulate Matter: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date

Requirement number	Requirement and citation
	for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.11.6	PM < 10 micron: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.11.7	PM < 2.5 micron: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this

Requirement number	Requirement and citation
	test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.11.8	Lead: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 24	**Smog Hog #10 Stack**
6.12.1	Particulate Matter: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent

Commented [A466]: Not necessary to test each and every Smog Hog stack.

Requirement number	Requirement and citation
	performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.12.2	PM < 10 micron: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.12.3	PM < 2.5 micron: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this

Requirement number	Requirement and citation
	test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.12.4	Lead: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
6.12.5	Particulate Matter: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R.

Requirement number	Requirement and citation
	7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.12.6	PM < 10 micron: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.12.7	PM < 2.5 micron: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R.

Requirement number	Requirement and citation
	7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.12.8	Lead: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 25	**Smog Hog #11 Stack**
6.13.1	Particulate Matter: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R.

Commented [A467]: Not necessary to test each and every Smog Hog stack.

Requirement number	Requirement and citation
	7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.13.2	PM < 10 micron: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.13.3	PM < 2.5 micron: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent

Requirement number	Requirement and citation
	performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.13.4	Lead: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
6.13.5	Particulate Matter: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R.

Requirement number	Requirement and citation
	7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.13.6	PM < 10 micron: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.13.7	PM < 2.5 micron: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R.

Requirement number	Requirement and citation
	7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.13.8	Lead: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 26	**Smog Hog #12 Stack**
6.14.1	Particulate Matter: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R.

Requirement number	Requirement and citation
	7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.14.2	PM < 10 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.14.3	PM < 2.5 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent

Requirement number	Requirement and citation
	performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.14.4	Lead: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
6.14.5	Particulate Matter: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R.

Requirement number	Requirement and citation
	7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.14.6	PM < 10 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.14.7	PM < 2.5 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R.

Requirement number	Requirement and citation
	7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.14.8	Lead: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 30	**Smog Hog #16 Stack**
6.15.1	Particulate Matter: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R.

Commented [A468]: Not necessary to test each and every Smog Hog stack.

Requirement number	Requirement and citation
	7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.15.2	PM < 10 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.15.3	PM < 2.5 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent

Requirement number	Requirement and citation
	performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.15.4	Lead: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
6.15.5	Particulate Matter: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R.

Requirement number	Requirement and citation
	7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.15.6	PM < 10 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.15.7	PM < 2.5 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R.

Requirement number	Requirement and citation
	7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.15.8	Lead: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 31	**Smog Hog #17 Stack**
6.16.1	Particulate Matter: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R.

Commented [A469]: Not necessary to test each and every Smog Hog stack.

Requirement number	Requirement and citation
	7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.16.2	PM < 10 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.16.3	PM < 2.5 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent

Requirement number	Requirement and citation
	performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.16.4	Lead: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
6.16.5	Particulate Matter: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R.

Requirement number	Requirement and citation
	7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.16.6	PM < 10 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.16.7	PM < 2.5 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R.

Requirement number	Requirement and citation
	7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.16.8	Lead: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 32	**Smog Hog #18 Stack**
6.17.1	Particulate Matter: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R.

Commented [A470]: Not necessary to test each and every Smog Hog stack.

Requirement number	Requirement and citation
	7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.17.2	PM < 10 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.17.3	PM < 2.5 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent

Requirement number	Requirement and citation
	performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.17.4	Lead: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
6.17.5	Particulate Matter: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R.

Requirement number	Requirement and citation
	7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.17.6	PM < 10 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.17.7	PM < 2.5 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R.

Requirement number	Requirement and citation
	7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.17.8	Lead: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 33	**Smog Hog #19 Stack**
6.18.1	Particulate Matter: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R.

Commented [A471]: Not necessary to test each and every Smog Hog stack.

Requirement number	Requirement and citation
	7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.18.2	PM < 10 micron: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.18.3	PM < 2.5 micron: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent

Requirement number	Requirement and citation
	performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.18.4	Lead: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
6.18.5	Particulate Matter: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R.

Requirement number	Requirement and citation
	7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.18.6	PM < 10 micron: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.18.7	PM < 2.5 micron: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R.

Requirement number	Requirement and citation
	7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.18.8	Lead: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, sund. 4a(a)]
STRU 34	**Smog Hog #20 Stack**
6.19.1	Particulate Matter: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R.

Commented [A472]: Not necessary to test each and every Smog Hog stack.

Requirement number	Requirement and citation
	7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.19.2	PM < 10 micron: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.19.3	PM < 2.5 micron: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent

Requirement number	Requirement and citation
	performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.19.4	Lead: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
6.19.5	Particulate Matter: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R.

Requirement number	Requirement and citation
	7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.19.6	PM < 10 micron: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.19.7	PM < 2.5 micron: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R.

Requirement number	Requirement and citation
	7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.19.8	Lead: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, sund. 4a(a)]
STRU 57	**Shipping vent 20**
6.20.1	PM < 10 micron: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure controlled emissions, in pounds per hour at maximum operating rate of EQUI 113 and EQUI 114. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

Commented [A473]: This is not a production-related emission point. Any and all testing of STRU 57 is unnecessary. This comment applies to all testing for Shipping Vent 20.

Requirement number	Requirement and citation
6.20.2	PM < 2.5 micron: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure controlled emissions, in pounds per hour at maximum operating rate of EQUI 113 and EQUI 114. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.20.3	Lead: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour at maximum operating rate of EQUI 113 and EQUI 114. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 73	**Battery Terminal Post Coater Stack**

Commented [A474]: Same comment as above.

Commented [A475]: Same comment as above.

Requirement number	Requirement and citation
6.21.1	PM < 10 micron: The Permittee shall conduct a performance test due within 180 days following issuance of Permit No. 12300341-101 and every 60 months thereafter to verify compliance with the PM10 emission limit of 0.01012 pounds per hour daily average. This test shall be conducted concurrently with the PM2.5 performance test. The Permittee shall calculate emissions of all units operating during the test using the methods described elsewhere in this permit. The total emissions calculated in this manner shall be compared to the measured emissions during the test. If the calculated emissions are equal or higher than the measured emissions, the Permittee will continue to use the emission calculations prescribed in this permit. If measured emissions are higher than calculated emissions, the Permittee must submit a plan to revise emission factors within 30 days of receiving the Notice of Compliance. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
6.21.2	PM < 2.5 micron: The Permittee shall conduct a performance test due within 180 days following issuance of Permit No. 12300341-101 and every 60 months thereafter to measure emissions to verify compliance with the PM2.5 emission limit of 0.01012 pounds per hour daily average. This shall be conducted concurrently with the PM10 performance test. The Permittee shall calculate emissions of all units operating during the test using the methods described elsewhere in this permit. The total emissions calculated in this manner shall be compared to the measured emissions during the test. If the calculated emissions are equal or higher than the measured emissions, the Permittee will continue to use the emission calculations prescribed in this permit. If measured emissions are higher than calculated emissions, the Permittee must submit a plan to revise emission factors within 30 days of receiving the Notice of Compliance. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter.

Commented [A476]: For STRU 73, Water Gremlin reserves the right to conduct any required testing at the applicable upstream emission units, similar to how Coater #6 was tested. Compliance with emission limits can be demonstrated best at the emission unit level. As has been discussed with MPCA on prior occasions, testing for extremely low levels of emissions in 15,000+ ACFM at STRU 73 will likely be problematic. This comment applies to all performance testing specified for STRU 73.

Commented [A477]: Same comment as above.

Requirement number	Requirement and citation
	If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 74	**Smog Hog #5 Stack**
6.22.1	Particulate Matter: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.22.2	PM < 10 micron: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day)

Commented [A478]: Not necessary to test each and every Smog Hog stack.

Commented [A479]: Same comment as above.

Requirement number	Requirement and citation
	based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.22.3	PM < 2.5 micron: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0080, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.22.4	Lead: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test.

Commented [A480]: Same comment as above.

Commented [A481]: Same comment as above.

Requirement number	Requirement and citation
	Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
6.22.5	Particulate Matter: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.22.6	PM < 10 micron: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter.

Commented [A482]: Same comment as above.

Commented [A483]: Same comment as above.

Requirement number	Requirement and citation
	If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2A(& 2(B)), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.22.7	PM < 2.5 micron: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.22.8	Lead: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for

Commented [A484]: Same comment as above.

Commented [A485]: Same comment as above.

Requirement number	Requirement and citation
	an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 75	**Smog Hog #8 Stack**
6.23.1	Particulate Matter: Particulate Matter: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.23.2	PM < 10 micron: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for

Commented [A486]: Not necessary to test each and every Smog Hog stack.

Commented [A487]: Same comment as above.

Requirement number	Requirement and citation
	an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.23.3	PM < 2.5 micron: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A)& 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.23.4	Lead: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter.

Commented [A488]: Same comment as above.

Commented [A489]: Same comment as above.

Requirement number	Requirement and citation
	If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
6.23.5	Particulate Matter: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.23.6	PM < 10 micron: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit.

Commented [A490]: Same comment as above.

Commented [A491]: Same comment as above.

Requirement number	Requirement and citation
	The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.23.7	PM < 2.5 micron: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
6.23.8	Lead: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit.

Commented [A492]: Same comment as above.

Commented [A493]: Same comment as above.

Requirement number	Requirement and citation
	The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]

7. Appendices

Appendix A. Insignificant activities and general applicable requirements

The table below lists the insignificant activities that are currently at the Facility and their associated general applicable requirements.

Minn. R.	Rule description of the activity	General applicable requirement
Minn. R. 7007.1300, subp. 3(E)	Brazing, soldering, torch-cutting, or welding equipment	PM, variable depending on airflow Opacity <= 20% (Minn. R. 7011.0710/0715)
Minn. R. 7007.1300, subp. 3(F)	Individual units with potential emissions less than 2000 lb/year of certain pollutants	PM, variable depending on airflow Opacity <= 20% (Minn. R. 7011.0710/0715)

Appendix B. Maximum material content, emissions calculations, and analytical methods for coating operations

1) Maximum Material Content

Table B.1 below specifies the maximum allowable volatile organic compound (VOC), *trans*-(1,2)-Dichloroethylene (t-DCE), and solids content of the coatings used at the facility. The listed maximum coating usage, VOC content shall be used in calculations that determine worst-case VOC emissions. The maximum coating usage and solids content for VOC and water-based coatings is listed in Table B.1, and is limited to this content based on dispersion modeling. The actual solids content of the coatings applied on any given day will be recorded and shall be used to calculate particulate matter (PM) emissions from coaters that apply coating using sprayers. Particulate emissions from UV coatings will assume the coating is 100 percent solids unless an alternative emission factor is developed based on source testing. The VOC solvent, water-based coating, and ultraviolet (UV) cured coating allowed by Air Permit No. 12300341-101 for coating operations is FluoSolv WS (VOC), Tacolyn 3570 (water-based), and WGCS 300 (UV), respectively. The minimum allowable transfer efficiency for the spray application of VOC solvent and water-based coating is limited to 65 percent transfer efficiency.

Table B.1. Coater description, and maximum material content and processing rates at the time of permit issuance

Emission Unit ID	Emission Unit Description	Application	Coating Type	Maximum VOC Content [1] (wt. %)	Maximum t-DCE Content (wt. %)	Maximum Solids Content [2] (wt. %)	Maximum Solvent Usage (lb/hr)	Maximum Coating Usage[3] (lb/hr)
EQUI 82	Battery Terminal Post Coater 6	Spray	UV	0.44	0	100	0	0.82
EQUI 84	Battery Terminal Post Coater 9	Spray	UV	0.44	0	100	0	1.32
EQUI 85	Battery Terminal Post Coater 10	Drip	Water-based	0.00157	0	21	22.06	27.92
EQUI 87	Battery Terminal Post Coater 12	Dip	VOC	90	90	21	13.25	16.77
EQUI 88	Battery Terminal Post Coater 15	Drip/Spray	Water-based/ VOC	90	90	21	4.73	5.44
EQUI 89	Battery Terminal Post Coater 17	Dip	Water-based	0.0010.57	0	21	19.40	24.55
EQUI 92	Battery Terminal Post Coater 20	Dip	Water-based	0.0010.57	0	21	19.69	24.92
EQUI 93	Battery Terminal Post Coater 21	Dip	Water-based/ VOC	90	90	21	66.26	83.88
EQUI 94	Battery Terminal Post Coater 22	Drip	Water-based/ VOC	0.0010.57	0	21	15.03	19.03
EQUI 95	Battery Terminal Post Coater 23	Spray	Water-based/ VOC	90	90	21	2.36	2.71
EQUI 97	Battery Terminal Post Coater 25	Dip	Water-based	0.0010.57	0	21	5.25	6.65
EQUI 98	Battery Terminal Post Coater 26	D~~r~~ip	Water-based/ VOC	90	90	21	2.03	2.57
EQUI 99	Battery Terminal Post Coater 27	Dip	Water-based/ VOC	90	90	21	17.46	22.10
EQUI 100	Battery Terminal Post Coater 28	Drip	Water-based/ VOC	90	90	21	3.85	4.87
EQUI 116	Battery Terminal Post Coater 30	Dip	Water-based	0.0010.57	0	21	16.28	20.61

Commented [A494]: The VOC content of water-based coating is 0.001%, or 0.00001 lb VOC/lb solids.

Commented [A495]: Dip, not drip

Emission Unit ID	Emission Unit Description	Application	Coating Type	Maximum VOC Content [1] (wt. %)	Maximum t-DCE Content (wt. %)	Maximum Solids Content [2] (wt. %)	Maximum Solvent Usage (lb/hr)	Maximum Coating Usage[3] (lb/hr)
EQUI 117	South Building R&D Coater	Spray	UV	0.44	0	100	0	0.41
EQUI 172	Battery Terminal Post Coater 29	Dip	Water-based	0.001~~0.57~~	0	21	43.50	55.06
EQUI 219	Battery Terminal Post Coater 33	Spray	UV	0.44	0	100	0	7.92
EQUI 220	Battery Terminal Post Coater 34	Spray	UV	0.44	0	100	0	7.92
EQUI 233	Battery Terminal Post Coater 19	Dip	Water-based	0.001~~0.57~~	0	21	1.71	2.16
EQUI 240	Prototype Coater	Spray	UV	0.44	0	100	0	0.41

[1] The VOC content of VOC solvent coating is equal to the highest VOC content described in the FluoSolv WS safety data sheet (SDS). The calculated VOC content of the water-based coating includes VOC contributions from ~~both~~ Tacolyn 3570~~, and Foamex, an anti-foaming agent. While no anti-foaming agent will be used in the coating process, it was included to produce a conservative VOC emission rate from water-based coating operations.~~ The VOC content weight is based on the amount of solids in the mixed coating, not the total coating weight. The VOC content of emissions due to off-gassing from UV-cured coating was calculated as the product of the highest process and potential volatiles determined using the ASTM D5403-93 test method.

Commented [A496]: Foamex is no longer used at Water Gremlin.

[2] The maximum coating solids content is limited based on what was assumed in potential to emit calculations for PM/PM_{10}/$PM_{2.5}$ from spray coaters. Since dip and drip coating application methods do not generate over-spray, no particulate emissions are expected from these coaters.

[3] Maximum coating usage for solvent and water-based coaters is calculated from the maximum solvent usage and the maximum solids content allowed by the permit as follows:

Maximum Coating Usage (lb/hr) = [Maximum Solvent Usage (lb/hr)] / [1 – ((Maximum Solids Content (wt. %) / 100)]

Maximum coating usage for UV coaters was determined by a series of three spray tests in which the highest throughput was used. The highest throughput used is assumed to be the same in each nozzle and the solids content of WGCS 300 is 100 percent (no solvent). Therefore, the maximum coating usage for UV coaters is calculated as follows:

Maximum Coating Usage (lb/hr) = [Highest Single Nozzle Spray Rate (lb/hr)] x [Maximum Number of Nozzles]

2) Coating Emissions Calculations for VOC, *trans*-(1,2)-Dichloroethylene, and PM/PM_{10}/$PM_{2.5}$
Default factors to be used in emission calculations are listed as follows, unless an alternative value is approved using test methods defined in Section 3 below:
   a) *trans*-(1,2)-Dichloroethylene emissions from FluoSolv WS shall assume the weight percent of *trans*-(1,2)-Dichloroethylene is 90 percent (0.90 mass fraction), which is equal to the VOC fraction unless the exact *trans*-(1,2)-Dichloroethylene content is made public).

   b) *trans*-(1,2)-Dichloroethylene emissions from other approved formulation that contains *trans*-(1,2)-Dichloroethylene shall assume the weight percent of VOC is equal to the weight percent of *trans*-(1,2)-Dichloroethylene, unless the exact *trans*-(1,2)-Dichloroethylene content is made public. If the VOC content in the SDS is given as a range, the highest VOC content in the range shall be used.

   c) *trans*-(1,2)-Dichloroethylene fugitive emissions from Chemical Storage Room = 0.00466 tons per day. This number represents the total daily emissions (statistical average) from the chemical storage room and shall be used for the calculation of emissions against the VOC and *trans*-(1,2)-Dichloroethylene permit limits.

d) *trans*-(1,2)-Dichloroethylene fugitive emissions from Other Non-Coating Rooms = 0.00025 tons per day. This number represents the total emissions from non-coating rooms and shall be used for calculation of emissions being released from each of the following rooms:
   i) Shipping and Receiving
   ii) Northwest Die Cast
   iii) East Die Cast
   iv) Gravity Cast
   v) Coining
   vi) Locker Room
   vii) Lunch Room
   viii) Offices

Commented [A497]: These values contradict Section 5.2.10 with a value of 0.00324 tpd, and the calculation method for TDCE, which includes a single value for non-coating room fugitive emissions.

e) Particulate matter ($PM_{10}/PM_{2.5}$) emissions from spray VOC and water-based coatings shall be calculated using the formulas specified in the permit based on the actual solids content of the applied coating(s).

f) VOC emission calculations from water-based coatings shall assume the following emission factor:
   i) VOC = 0.0057 lb VOC/lb coating
   ii) Revised emission factors may be used upon approval of test results based on actual operation.

g) VOC emission calculations from degassing of UV coatings shall assume the following emission factor:
   i) VOC = 0.0044 lb VOC/lb coating
   ii) Revised emission factors may be used upon approval of test results based on actual operation.

h) Particulate matter ($PM_{10}/PM_{2.5}$) emissions from spray UV coatings shall assume the following emission factors:
   i) PM_{10} = 0.0024 lb PM_{10}/lb coating
   ii) $PM_{2.5}$ = 0.0024 lb $PM_{2.5}$/lb coating
   iii) Revised emission factors may be used upon approval of test results based on actual operation.

3) Analytical Methods

When manufacturer's data is not used for purchased material, and to determine content in recovered and waste material, the Permittee may test the coatings to change the default emission factors listed in Section 2 by following the testing requirements in Minn. R. 7017.2001 through 7017.2060 and the following:

a) Total VOC mass fraction in VOC-containing material
   i) VOC solvent coatings: the Permittee may use Method 24 in Appendix A to 40 CFR Part 60 to determine the VOC mass fraction and use that value as a substitute for the default VOC mass fraction in Section 2.
   ii) Water-based coatings: the Permittee may use EPA Method 8260B to determine the mass fraction of VOCs in the water-based coating. The calculated VOC mass fraction used to substitute the default value in Section 2 shall include the VOC contribution from anti-foaming agents (e.g. Foamex).
   iii) UV coatings: The Permittee may use ASTM D5403-93 for reactive coating material such as UV coatings in which some of the volatile content react to form solids and are not emitted to the atmosphere. The Permittee may use that value as a substitute for the default VOC mass fraction in Section 2.
   iv) Other Methods approved by MPCA may be used pursuant to Minn. R. 7017.2050.
   v) If VOC results are below detection levels, the Permittee shall use the method detection level used for the analysis to report content value and use for emission calculations.

b) Determination of total VOC and *trans*-(1,2)-Dichloroethylene mass fraction in waste coating material

i) Use EPA method 311 in Appendix A to 40 CFR part 63.
ii) Other Methods approved by MPCA may be used pursuant to Minn. R. 7017.2050.
iii) If *trans*-(1,2)-Dichloroethylene results are below detection levels, the analytical detection level must be used to report the VOC content value to be used in emission calculations.
iv) This analysis shall be conducted for every batch of waste to be shipped off-site if being used in for calculation of *trans*-(1,2)-Dichloroethylene emissions. A composite sample may be used to represent the composition of every batch to be shipped as waste. After a minimum of 30 months of testing shipments, the Permittee may submit for approval a proposal to define the conditions under which subsequent shipments do not need to be re-tested. The proposal must be supported with actual test data of shipment, the associated past operating records and projections of future operating conditions.

c) Determination of total VOC and *trans*-(1,2)-Dichloroethylene mass fraction in material recovered by the distiller
Note: This analysis is only required if a *trans*-(1,2)-Dichloroethylene mass fraction other than 100% is assumed to calculate amount of recovered material or amount of emissions.
i) Use a gas chromatography method such as EPA method 311 in Appendix A to 40 CFR part 63.
ii) Other Methods approved by MPCA may be used pursuant to Minn. R. 7017.2050.
iii) If *trans*-(1,2)-Dichloroethylene results are below detection levels, the analytical detection level must be used to report the VOC content value to be used in emission calculations.
iv) This analysis shall be conducted for every batch to be used for calculation of *trans*-(1,2)-Dichloroethylene emissions. After a minimum of 30 months of testing recovered material, the Permittee may submit for approval a proposal to define the conditions under which subsequent recovered material batches do not need to be re-tested. The proposal must be supported with actual test data of recovered batches, the associated past operating records and projections of future operating conditions.

d) Determination of HAP content in coating material
i) The Permittee may rely on formulation data provided by the manufacturer or supplier, such as the material safety data sheet (MSDS) or safety data sheet (SDS), as long as it represents each HAP compound in the material that is present at 0.1 percent by mass or more for OSHA-defined carcinogens as specified in 29 CFR 1910.1200(d)(4) and at 1.0 percent by mass or more for other HAP compounds.

e) Determination of *trans*-(1,2)-Dichloroethylene in indoor air of non-coating rooms
i) When required by this permit, or if the Permittee wishes to change the emission rates in Sections 2c and 2d of this Appendix, the Permittee shall perform indoor air testing in the following non-coating rooms:
(a) Chemical Storage
(b) Shipping and Receiving
(c) Northwest Die Cast
(d) East Die Cast
(e) Gravity Cast
(f) Coining
(g) Locker Room
(h) Lunch Room
(i) Offices
ii) Use EPA Method TO-15 with Summa Canisters using the following guidelines:
(a) Remediation Division Vapor investigation and mitigation decision best management practices at https://www.pca.state.mn.us/sites/default/files/c-rem3-06.pdf and Vapor intrusion best management practices | Minnesota Pollution Control Agency (state.mn.us)

(b) Remediation Division Vapor mitigation best management practices at https://www.pca.state.mn.us/sites/default/files/aq-ei6-01i.pdf. This requirement terminates when MPCA terminates the Administrative Order.

iii) The revised emission rates shall be used in daily emissions calculations described in the permit immediately following MPCA-approval of the indoor air test report.

Commented [A498]: We believe this link is incorrect. This is the Jan 17, 2020, Administrative Order. Is this what MPCA meant to include? https://www.pca.state.mn.us/waste/vapor-intrusion-best-management-practices

Appendix C. NAAQS modeling and AERA parameters

Tables C1-C6 of this appendix list the parameters used in the April 2022 $PM_{10}/PM_{2.5}$, NOx, and Lead air dispersion modeling at the facility. The parameters described the operation of the facility at the maximum permitted capacity. The purpose of listing these parameters is to provide a benchmark for future changes.

Table C1: PM10 Point Source (24-hour) Note: Note: EQUI 160, EQUI 117, EQUI 223-232, and EQUI 240 operations are limited to 5 am to 11 pm daily

Permit ID	AERMOD ID	Easting (m)	Northing (m)	Base Elev (m)	Emission Rate (lb/hr)	Height (m)	Exit Temp (K)	Exit Vel (m/s)	Diam (m)	Flow rate (ACFM)
EQUI82, EQUI84, EQUI85, EQUI87-89, EQUI92-EQUI95, EQUI97-EQUI100, EQUI116, EQUI166, EQUI173, EQUI219, EQUI220, EQUI233	STRU73	497,469.52	4,991,185.04	283.09	0.01012	12.192	294.261	20.66718	0.6604	15000
EQUI101-EQUI104, EQUI221	STRU1	497,515.69	4,991,223.02	283.09	0.1012	4.2672	327.04~~333.15~~	9.08	0.546	4504.712
EQUI101, EQUI102, EQUI104	STRU68	497,504.16	4,991,222.33	283.09	0.01744	10.8204	307.65	2.751836	0.889	3619.278
EQUI103	STRU69	497,511.72	4,991,232.43	283.09	0.003725	10.91184	398.8722	6.087364	0.2032	418.2853
EQUI121-EQUI123	STRU15	497483.54~~4 97,480.72~~	4991254.83~~4, 991,264.98~~	283.09	0.03887	3.683	312.039	9.08	0.546	4504.712
EQUI124-EQUI126, EQUI157	STRU16	497481.97 ~~497,479.58~~	4991258.10 ~~4,991,255.60~~	283.09	0.06388	3.7338	312.039	9.08	0.546	4504.712
EQUI127-EQUI129	STRU17	497482.40 ~~497,481.61~~	4991265.22 ~~4,991,269.33~~	283.09	0.01864	3.7084	312.039	7.57	0.546	3755.58
EQUI130, EQUI131	~~STRU18~~ STRU74	497,482.33 ~~497,482.30~~	4,991,280.77 ~~4,991,273.17~~	283.09	0.02084	3.6322	312.039	7.57	0.546	3755.58
EQUI132, EQUI133	STRU20	497,482.57	4,991,286.34	283.09	0.02523	3.6322	312.039	7.57	0.546	3755.58
EQUI134, EQUI135	~~STRU201~~ STRU75	497,468.95 ~~497,465.72~~	4,991,293.05 ~~4,991,293.31~~	283.09	0.03348	3.683	312.039	7.57	0.546	3755.58

Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt

Permit ID	AERMOD ID	Easting (m)	Northing (m)	Base Elev (m)	Emission Rate (lb/hr)	Height (m)	Exit Temp (K)	Exit Vel (m/s)	Diam (m)	Flow rate (ACFM)
EQUI136	STRU23	497,462.23	4,991,293.31	283.09	0.02222	3.683	312.039	7.57	0.546	3755.58
EQUI137, EQUI138	STRU24	497,449.23	4,991,294.27	283.09	0.02202	3.8608	312.039	7.57	0.546	3755.58
EQUI139, EQUI140	STRU25	497,428.18	4,991,284.88	283.09	0.02641	3.7592	312.039	7.57	0.546	3755.58
EQUI141-EQUI143, EQUI155	STRU26	497,427.99	4,991,275.47	283.09	0.05521	3.81	312.039	7.57	0.546	3755.58
EQUI146, EQUI158	STRU30	497,514.59	4,991,210.69	283.09	0.06048	5.2324	312.039	7.57	0.546	3755.58
EQUI147	STRU31	497,513.65	4,991,198.51	283.09	0.02982	5.1816	312.039	7.57	0.546	3755.58
EQUI149, EQUI150	STRU32	497,495.07	4,991,190.04	283.09	0.03007	5.5118	312.039	7.57	0.546	3755.58
EQUI152, EQUI156	STRU33	497,489.65	4,991,190.16	283.09	0.05370	5.334	312.039	7.57	0.546	3755.58
EQUI153, EQUI154	STRU34	497,482.45	4,991,191.19	283.09	0.05749	5.2324	312.039	7.57	0.546	3755.58
EQUI160, EQUI117	STRU35	497,540.87	4,990,864.07	280.55	0.01710	7.315	294.261	4.040	0.546	2004.30
EQUI174	STRU59	497,507.89	4,991,240.39	283.09	No Particulates	10.0584	294.261	9.665178	0.965701	15000
EQUI146, EQUI150, EQUI172, EQUI110, EQUI112	STRU53	497,505.64	4,991,216.93	283.09	0.03630	10.0584	294.261	9.665178	0.965701	15000
EQUI147, EQUI158, EQUI110, EQUI112	STRU52	497,503.83	4,991,197.29	283.09	0.04234	10.0584	294.261	9.665178	0.965701	15000
EQUI149, EQUI152, EQUI154, EQUI156, EQUI110, EQUI112	STRU51	497,488.75	4,991,198.93	283.09	0.056539 ~~0.01864~~	10.0584	294.261	9.665178	0.965701	15000
EQUI153, EQUI157, EQUI110, EQUI112	STRU56	497,483.11	4,991,219.35	283.09	0.04285	10.0584	294.261	9.665178	0.965701	15000
EQUI130-EQUI136, EQUI107, EQUI108, EQUI111	STRU44	497,474.10	4,991,285.55	283.09	0.07081	7.9248	294.261	12.41206	1.100146	25000

Formatted: Font: 9 pt

Permit ID	AERMOD ID	Easting (m)	Northing (m)	Base Elev (m)	Emission Rate (lb/hr)	Height (m)	Exit Temp (K)	Exit Vel (m/s)	Diam (m)	Flow rate (ACFM)
EQUI137-EQUI141, EQUI107, EQUI108, EQUI111	STRU45	497,436.71	4,991,287.76	283.09	0.05712	7.9248	294.261	12.41206	1.100146	25000

Permit ID	AERMOD ID	Easting (m)	Northing (m)	Base Elev (m)	Emission Rate (lb/hr)	Height (m)	Exit Temp (K)	Exit Vel (m/s)	Diam (m)	Flow rate (ACFM)
EQUI142, EQUI143, EQUI155, EQUI107, EQUI108, EQUI111	STRU46	497,436.01	4,991,275.77	283.09	0.04535	7.9248	294.261	12.41206	1.100146	25000
EQUI127-EQUI129, EQUI106, EQUI108	STRU47	497,475.70	4,991,257.67	283.09	0.02241	7.0104	294.261	9.665178	0.965701	15000
EQUI121, EQUI122, EQUI106, EQUI109	STRU48	497,474.48	4,991,250.50	283.09	0.02520	7.0104	294.261	9.665178	0.965701	15000
EQUI123, EQUI106, EQUI109	STRU49	497,473.85	4,991,241.55	283.09	0.01779	7.0104	294.261	9.665178	0.965701	15000
EQUI125, EQUI126, EQUI115, EQUI116, EQUI109	STRU50	497,471.27	4,991,218.35	283.09	0.01688	7.0104	294.261	9.665178	0.965701	15000
EQUI124, EQUI115, EQUI106, EQUI109	STRU43	497,473.47	4,991,236.42	283.09	0.01896	7.0104	294.261	9.665178	0.965701	15000
EQUI113, EQUI114	STRU57	497,458.94	4,991,211.27	283.09	0.001090	9.144	294.261	6.096	0.419405	50
FUGI001	CT1	497,506.00	4,991,256.00	283.09	0.15499 ~~0.001134~~	6.000	294.261	9.600	2.500	99,850
FUGI002	CT2	497,513.00	4,991,255.60	283.09	0.15499 ~~0.001134~~	6.000	294.261	9.600	2.500	99,850
FUGI004	CT3	497,521.73	4,991,255.96	283.09	0.15499 ~~0.001134~~	6.000	294.261	9.600	2.500	99,850
EQUI222	STRU70	497,499.20	4,991,225.76	283.09	0.002235	10.973	352.594	7.991	0.2286	694.9295
EQUI223-EQUI232	STRU71	497,551.22	4,990,875.54	280.55	0.03348	6.401	301.483	2.8165	0.716	2400
EQUI240	STRU72	497,511.46	4,990,881.57	280.55	0.006336	6.401	294.261	16.024	0.274	2000

Formatted: Font: 9 pt

Formatted: Font: 9 pt

Formatted: Font: 9 pt

Table C2: PM2.5 Point Source (24-hour; Annual) Note: EQUI 160, EQUI 117, EQUI 223-232, and EQUI 240 operations are limited to 5 am to 11 pm daily

Permit ID	AERMOD ID	Easting (m)	Northing (m)	Base Elev (m)	Emission Rate (lb/hr)	Height (m)	Exit Temp (K)	Exit Vel (m/s)	Diam (m)	Flow rate (ACFM)
EQUI82, EQUI84, EQUI85, EQUI87-89, EQUI92-EQUI95, EQUI97-EQUI100, EQUI116, EQUI166, EQUI173, EQUI219, EQUI220, EQUI233	STRU73	497,469.52	4,991,185.04	283.09	0.01012	12.192	294.261	20.66718	0.6604	15000
EQUI101-EQUI104, EQUI221	STRU1	497,515.69	4,991,223.02	283.09	0.1012	4.2672	327.0389 ~~333.15~~	9.08	0.546	4504.712
EQUI101, EQUI102, EQUI104	STRU68	497,504.16	4,991,222.33	283.09	0.01744	10.8204	307.65	2.751836	0.889	3619.278
EQUI103	STRU69	497,511.72	4,991,232.43	283.09	0.003725	10.91184	398.8722	6.087364	0.2032	418.2853
EQUI121-EQUI123	STRU15	497483.54 ~~497,480.72~~	4991254.83 ~~4,991,264.98~~	283.09	0.03887	3.683	312.039	9.08	0.546	4504.712
EQUI124-EQUI126, EQUI157	STRU16	497481.97 ~~497,479.58~~	4991258.1 ~~4,991,255.60~~	283.09	0.06388	3.7338	312.039	9.08	0.546	4504.712
EQUI127-EQUI129	STRU17	497482.4 ~~497,481.61~~	4991265.22 ~~4,991,269.33~~	283.09	0.01864	3.7084	312.039	7.57	0.546	3755.58
EQUI130, EQUI131	~~STRU18~~ STRU74	497,482.33 ~~497,482.30~~	4,991,280.77 ~~4,991,273.17~~	283.09	0.02084	3.6322	312.039	7.57	0.546	3755.58
EQUI132, EQUI133	STRU20	497,482.57	4,991,286.34	283.09	0.02523	3.6322	312.039	7.57	0.546	3755.58
EQUI134, EQUI135	~~STRU21~~ STRU75	497,468.95 ~~497,465.72~~	4,991,293.05 ~~4,991,293.31~~	283.09	0.03348	3.683	312.039	7.57	0.546	3755.58
EQUI136	STRU23	497,462.23	4,991,293.31	283.09	0.02222	3.683	312.039	7.57	0.546	3755.58
EQUI137, EQUI138	STRU24	497,449.23	4,991,294.27	283.09	0.02202	3.8608	312.039	7.57	0.546	3755.58
EQUI139, EQUI140	STRU25	497,428.18	4,991,284.88	283.09	0.02641	3.7592	312.039	7.57	0.546	3755.58
EQUI141-EQUI143, EQUI155	STRU26	497,427.99	4,991,275.47	283.09	0.05521	3.81	312.039	7.57	0.546	3755.58

Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt

Permit ID	AERMOD ID	Easting (m)	Northing (m)	Base Elev (m)	Emission Rate (lb/hr)	Height (m)	Exit Temp (K)	Exit Vel (m/s)	Diam (m)	Flow rate (ACFM)
EQUI146, EQUI158	STRU30	497,514.59	4,991,210.69	283.09	0.06048	5.2324	312.039	7.57	0.546	3755.58
EQUI147	STRU31	497,513.65	4,991,198.51	283.09	0.02982	5.1816	312.039	7.57	0.546	3755.58
EQUI149, EQUI150	STRU32	497,495.07	4,991,190.04	283.09	0.03007	5.5118	312.039	7.57	0.546	3755.58
EQUI152, EQUI156	STRU33	497,489.65	4,991,190.16	283.09	0.05370	5.334	312.039	7.57	0.546	3755.58
EQUI153, EQUI154	STRU34	497,482.45	4,991,191.19	283.09	0.05749	5.2324	312.039	7.57	0.546	3755.58
EQUI160, EQUI117	STRU35	497,540.87	4,990,864.07	280.55	0.01710	7.315	294.261	4.040	0.546	2004.30
EQUI174	STRU59	497,507.89	4,991,240.39	283.09	No Particulates	10.0584	294.261	9.665178	0.965701	15000
EQUI146, EQUI150, EQUI172, EQUI110, EQUI112	STRU53	497,505.64	4,991,216.93	283.09	0.03630	10.0584	294.261	9.665178	0.965701	15000
EQUI147, EQUI158, EQUI110, EQUI112	STRU52	497,503.83	4,991,197.29	283.09	0.04234	10.0584	294.261	9.665178	0.965701	15000
EQUI149, EQUI152, EQUI154, EQUI156, EQUI110, EQUI112	STRU51	497,488.75	4,991,198.93	283.09	~~0.056539~~ ~~0.01864~~	10.0584	294.261	9.665178	0.965701	15000
EQUI153, EQUI157, EQUI110, EQUI112	STRU56	497,483.11	4,991,219.35	283.09	0.04285	10.0584	294.261	9.665178	0.965701	15000
EQUI130-EQUI136, EQUI107, EQUI108, EQUI111	STRU44	497,474.10	4,991,285.55	283.09	0.07081	7.9248	294.261	12.41206	1.100146	25000
EQUI137-EQUI141, EQUI107, EQUI108, EQUI111	STRU45	497,436.71	4,991,287.76	283.09	0.05712	7.9248	294.261	12.41206	1.100146	25000

Formatted: Font: 9 pt

Permit ID	AERMOD ID	Easting (m)	Northing (m)	Base Elev (m)	Emission Rate (lb/hr)	Height (m)	Exit Temp (K)	Exit Vel (m/s)	Diam (m)	Flow rate (ACFM)
EQUI142, EQUI143, EQUI155, EQUI107, EQUI108, EQUI111	STRU46	497,436.01	4,991,275.77	283.09	0.04535	7.9248	294.261	12.41206	1.100146	25000
EQUI127-EQUI129, EQUI106, EQUI108	STRU47	497,475.70	4,991,257.67	283.09	0.02241	7.0104	294.261	9.665178	0.965701	15000
EQUI121, EQUI122, EQUI106, EQUI109	STRU48	497,474.48	4,991,250.50	283.09	0.02520	7.0104	294.261	9.665178	0.965701	15000
EQUI123, EQUI106, EQUI109	STRU49	497,473.85	4,991,241.55	283.09	0.01779	7.0104	294.261	9.665178	0.965701	15000
EQUI125, EQUI126, EQUI115, EQUI116, EQUI109	STRU50	497,471.27	4,991,218.35	283.09	0.01688	7.0104	294.261	9.665178	0.965701	15000
EQUI124, EQUI115, EQUI106, EQUI109	STRU43	497,473.47	4,991,236.42	283.09	0.01896	7.0104	294.261	9.665178	0.965701	15000
EQUI113, EQUI114	STRU57	497,458.94	4,991,211.27	283.09	0.001090	9.144	294.261	6.096	0.419405	50
FUGI001	CT1	497,506.00	4,991,256.00	283.09	~~0.001134~~ 0.15499	6.000	294.261	9.600	2.500	99,850
FUGI002	CT2	497,513.00	4,991,255.60	283.09	0.15499 ~~0.001134~~	6.000	294.261	9.600	2.500	99,850
FUGI004	CT3	497,521.73	4,991,255.96	283.09	0.15499 ~~0.001134~~	6.000	294.261	9.600	2.500	99,850
EQUI222	STRU70	497,499.20	4,991,225.76	283.09	0.002235	10.973	352.594	7.991	0.2286	694.9295
EQUI223-EQUI232	STRU71	497,551.22	4,990,875.54	280.55	0.03348	6.401	301.483	2.8165	0.716	2400

Formatted: Font: 9 pt

Formatted: Font: 9 pt

Formatted Table

Formatted: Font: 9 pt

Formatted: Font: 9 pt

Table C3: NOx Point Source (1-hour; Annual) Note: EQUI 160, EQUI 117, EQUI 223-232, and EQUI 240 operations are limited to 5 am to 11 pm daily

Permit ID	AERMOD ID	Easting (m)	Northing (m)	Base_Elev (m)	Emission Rate (lb/hr)	Height (m)	Exit Temp (K)	Exit Vel (m/s)	Diam (m)	Flow rate (ACFM)
EQUI82, EQUI84, EQUI85, EQUI87-89, EQUI92-EQUI95, EQUI97-EQUI100, EQUI116, EQUI166, EQUI173, EQUI219, EQUI220, EQUI233	STRU73	497,469.52	4,991,185.04	283.09	No Emissions	12.192	294.261	20.66718	0.6604	15000
EQUI101, EQUI102, EQUI104	STRU68	497,504.16	4,991,222.33	283.09	0.229411765	10.8204	307.65	2.751836	0.889	3619.278
EQUI103	STRU69	497,511.72	4,991,232.43	283.09	0.049019608	10.91184	398.8722	6.087364	0.2032	418.2853
EQUI146, EQUI150, EQUI172, EQUI110, EQUI112	STRU53	497,505.64	4,991,216.93	283.09	0.24527598	10.0584	294.261	9.665178	0.965701	15000
EQUI147, EQUI158, EQUI110, EQUI112	STRU52	497,503.83	4,991,197.29	283.09	0.24527598	10.0584	294.261	9.665178	0.965701	15000
EQUI149, EQUI152, EQUI154, EQUI156, EQUI110, EQUI112	STRU51	497,488.75	4,991,198.93	283.09	0.24527598	10.0584	294.261	9.665178	0.965701	15000
EQUI153, EQUI157, EQUI110, EQUI112	STRU56	497,483.11	4,991,219.35	283.09	0.24527598	10.0584	294.261	9.665178	0.965701	15000
EQUI130-EQUI136, EQUI107, EQUI108, EQUI111	STRU44	497,474.10	4,991,285.55	283.09	0.406928824	7.9248	294.261	12.41206	1.100146	25000
EQUI137-EQUI141, EQUI107, EQUI108, EQUI111	STRU45	497,436.71	4,991,287.76	283.09	0.406928824	7.9248	294.261	12.41206	1.100146	25000
EQUI142, EQUI143, EQUI155, EQUI107, EQUI108, EQUI111	STRU46	497,436.01	4,991,275.77	283.09	0.406928824	7.9248	294.261	12.41206	1.100146	25000

Permit ID	AERMOD ID	Easting (m)	Northing (m)	Base_Elev (m)	Emission Rate (lb/hr)	Height (m)	Exit Temp (K)	Exit Vel (m/s)	Diam (m)	Flow rate (ACFM)
EQUI127-EQUI129, EQUI106, EQUI108	STRU47	497,475.70	4,991,257.67	283.09	0.198742549	7.0104	294.261	9.665178	0.965701	15000
EQUI121, EQUI122, EQUI106, EQUI109	STRU48	497,474.48	4,991,250.50	283.09	0.182598039	7.0104	294.261	9.665178	0.965701	15000
EQUI123, EQUI106, EQUI109	STRU49	497,473.85	4,991,241.55	283.09	0.182598039	7.0104	294.261	9.665178	0.965701	15000
EQUI109	STRU50	497,471.27	4,991,218.35	283.09	0.121323529	7.0104	294.261	9.665178	0.965701	15000
EQUI106, EQUI109	STRU43	497,473.47	4,991,236.42	283.09	0.182598039	7.0104	294.261	9.665178	0.965701	15000
EQUI222	STRU70	497,499.20	4,991,225.76	283.09	0.029411765	10.9728	352.5944	7.99084	0.2286	694.9295

Table C4: Lead Point Source (Quarter) Note: EQUI 160, EQUI 117, EQUI 223-232, and EQUI 240 operations are limited to 5 am to 11 pm daily

Permit ID	AERMOD ID	Easting (m)	Northing (m)	Base_Elev (m)	Emission Rate (lb/hr)	Height (m)	Exit Temp (K)	Exit Vel (m/s)	Diam (m)	Flow rate (ACFM)
EQUI82, EQUI84, EQUI85, EQUI87-89, EQUI92-EQUI95, EQUI97-EQUI100, EQUI116, EQUI166, EQUI173, EQUI219, EQUI220, EQUI233	STRU73	497,469.52	4,991,185.04	283.09	0	12.192	294.261	20.66718	0.6604	15000
EQUI101-EQUI104, EQUI221	STRU1	497,515.69	4,991,223.02	283.09	1.24E-04	4.2672	327.039	9.08	0.546	4504.712
EQUI101, EQUI102, EQUI104	STRU68	497,504.16	4,991,222.33	283.09	1.15E-06	10.8204	307.65	2.751836	0.889	3619.278
EQUI103	STRU69	497,511.72	4,991,232.43	283.09	2.45E-07	10.91184	398.8722	6.087364	0.2032	418.2853
EQUI121-EQUI123	STRU15	497483.5 ~~497,480.72~~	4991254.8 ~~4,991,264.98~~	283.09	9.58E-04	3.683	312.039	9.08	0.546	4504.712
EQUI124-EQUI126, EQUI157	STRU16	497482 ~~497,479.58~~	4991258.1 ~~4,991,255.60~~	283.09	1.57E-03	3.7338	312.039	9.08	0.546	4504.712

Formatted Table
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt

Permit ID	AERMOD ID	Easting (m)	Northing (m)	Base_Elev (m)	Emission Rate (lb/hr)	Height (m)	Exit Temp (K)	Exit Vel (m/s)	Diam (m)	Flow rate (ACFM)
EQUI127-EQUI129	STRU17	497482.4 ~~497,481.61~~	4991265.2 ~~4,991,269.33~~	283.09	4.59E-04	3.7084	312.039	7.57	0.546	3755.58
EQUI130, EQUI131	~~STRU18~~ STRU74	497,482.33 ~~497,482.30~~	4,991,280.77 ~~4,991,273.17~~	283.09	5.14E-04	3.6322	312.039	7.57	0.546	3755.58
EQUI132, EQUI133	STRU20	497,482.57	4,991,286.34	283.09	6.22E-04	3.6322	312.039	7.57	0.546	3755.58
EQUI134, EQUI135	~~STRU21~~ STRU75	497,468.95 ~~497,465.72~~	4,991,293.05 ~~4,991,293.31~~	283.09	8.25E-04	3.683	312.039	7.57	0.546	3755.58
EQUI136	STRU23	497,462.23	4,991,293.31	283.09	5.48E-04	3.683	312.039	7.57	0.546	3755.58
EQUI137, EQUI138	STRU24	497,449.23	4,991,294.27	283.09	5.43E-04	3.8608	312.039	7.57	0.546	3755.58
EQUI139, EQUI140	STRU25	497,428.18	4,991,284.88	283.09	6.51E-04	3.7592	312.039	7.57	0.546	3755.58
EQUI141-EQUI143, EQUI155	STRU26	497,427.99	4,991,275.47	283.09	1.36E-03	3.81	312.039	7.57	0.546	3755.58
EQUI146, EQUI158	STRU30	497,514.59	4,991,210.69	283.09	1.49E-03	5.2324	312.039	7.57	0.546	3755.58
EQUI147	STRU31	497,513.65	4,991,198.51	283.09	7.35E-04	5.1816	312.039	7.57	0.546	3755.58
EQUI149, EQUI150	STRU32	497,495.07	4,991,190.04	283.09	7.41E-04	5.5118	312.039	7.57	0.546	3755.58
EQUI152, EQUI156	STRU33	497,489.65	4,991,190.16	283.09	1.32E-03	5.334	312.039	7.57	0.546	3755.58
EQUI153, EQUI154	STRU34	497,482.45	4,991,191.19	283.09	1.42E-03	5.2324	312.039	7.57	0.546	3755.58
EQUI160, EQUI117	STRU35	497,540.87	4,990,864.07	280.55	4.41E-03	7.315	294.261	4.040	0.546	2,004
EQUI174	STRU59	497,507.89	4,991,240.39	283.09	0	10.0584	294.261	9.665178	0.965701	15000
EQUI146, EQUI150, EQUI172, EQUI110, EQUI112	STRU53	497,505.64	4,991,216.93	283.09	1.96E-04	10.0584	294.261	9.665178	0.965701	15000
EQUI147, EQUI158, EQUI110, EQUI112	STRU52	497,503.83	4,991,197.29	283.09	2.63E-04	10.0584	294.261	9.665178	0.965701	15000

Formatted Table
Formatted: Font: 9 pt
Formatted: Font: 9 pt

Permit ID	AERMOD ID	Easting (m)	Northing (m)	Base_Elev (m)	Emission Rate (lb/hr)	Height (m)	Exit Temp (K)	Exit Vel (m/s)	Diam (m)	Flow rate (ACFM)
EQUI149, EQUI152, EQUI154, EQUI156, EQUI110, EQUI112	STRU51	497,488.75	4,991,198.93	283.09	4.19E-04	10.0584	294.261	9.665178	0.965701	15000
EQUI153, EQUI157, EQUI110, EQUI112	STRU56	497,483.11	4,991,219.35	283.09	2.68E-04	10.0584	294.261	9.665178	0.965701	15000
EQUI130-EQUI136, EQUI107, EQUI108, EQUI111	STRU44	497,474.10	4,991,285.55	283.09	4.42E-04	7.9248	294.261	12.41206	1.100146	25000
EQUI137-EQUI141, EQUI107, EQUI108, EQUI111	STRU45	497,436.71	4,991,287.76	283.09	2.91E-04	7.9248	294.261	12.41206	1.100146	25000
EQUI142, EQUI143, EQUI155, EQUI107, EQUI108, EQUI111	STRU46	497,436.01	4,991,275.77	283.09	1.61E-04	7.9248	294.261	12.41206	1.100146	25000
EQUI127-EQUI129, EQUI106, EQUI108	STRU47	497,475.70	4,991,257.67	283.09	8.16E-05	7.0104	294.261	9.665178	0.965701	15000
EQUI121, EQUI122, EQUI106, EQUI109	STRU48	497,474.48	4,991,250.50	283.09	1.26E-04	7.0104	294.261	9.665178	0.965701	15000
EQUI123, EQUI106, EQUI109	STRU49	497,473.85	4,991,241.55	283.09	4.40E-05	7.0104	294.261	9.665178	0.965701	15000
EQUI125, EQUI126, EQUI115, EQUI116, EQUI109	STRU50	497,471.27	4,991,218.35	283.09	8.72E-05	7.0104	294.261	9.665178	0.965701	15000
EQUI124, EQUI115, EQUI106, EQUI109	STRU43	497,473.47	4,991,236.42	283.09	7.96E-06	7.0104	294.261	9.665178	0.965701	15000
EQUI113, EQUI114	STRU57	497,458.94	4,991,211.27	283.09	2.29E-05	9.144	294.261	6.096	0.419405	50
EQUI222	STRU70	497499.2 ~~497,506.00~~	4991225.8 ~~4,991,256.00~~	283.09	1.47E-07	10.973	352.594	7.991	0.229	695
EQUI223-EQUI232	STRU71	497551.2 ~~497,513.00~~	4990875.5 ~~4,991,255.60~~	280.55 ~~283.09~~	No Emissions	6.401	301.483	2.815	0.716	2,400
EQUI240	STRU72	497511.5 ~~497,499.20~~	4990881.6 ~~4,991,225.76~~	280.55 ~~283.09~~	No Emissions	6.401	294.261	16.024	0.274	2,000

Formatted Table
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt

Table C4: Unit Emission Rate (1, 3, 8, 24, Month, Annual) Note: EUQI 160, EQUI 117, EQUI 223-232, and EQUI 240 operations are limited to 5 am to 11 pm daily
The unit emission rate indicates that modeling was conducted at the stacks that vent more than one unit. Lead NAAQS for 3 month averaging time and annual is for health benchmark emission limit at STRUs.

Permit ID	AERMOD ID	Easting (m)	Northing (m)	Base_Elev (m)	Emission Rate (lb/hr)	Height (m)	Exit Temp (K)	Exit Vel (m/s)	Diam (m)	Flow rate (ACFM)
EQUI82, EQUI84, EQUI85, EQUI87-89, EQUI92-EQUI95, EQUI97-EQUI100, EQUI116, EQUI166, EQUI173, EQUI219, EQUI220, EQUI233	STRU73	497,469.52	4,991,185.04	283.09	7.9365	12.192	294.261	20.66718	0.6604	15000
EQUI101-EQUI104, EQUI221	STRU1	497,515.69	4,991,223.02	283.09	7.9365	4.2672	327.039	9.08	0.546	4504.712
EQUI121-EQUI123	STRU15	497483.5 ~~497,480.72~~	4991254.8 ~~4,991,264.98~~	283.09	7.9365	3.683	312.039	9.08	0.546	4504.712
EQUI124-EQUI126, EQUI157	STRU16	497482 ~~497,479.58~~	4991258.1 ~~4,991,255.60~~	283.09	7.9365	3.7338	312.039	9.08	0.546	4504.712
EQUI127-EQUI129	STRU17	497482.40 ~~497,481.61~~	4991265.2 ~~4,991,269.33~~	283.09	7.9365	3.7084	312.039	7.57	0.546	3755.58
EQUI130, EQUI131	~~STRU18~~ STRU74	497,482.33 ~~497,482.30~~	4,991,280.77 ~~4,991,273.17~~	283.09	7.9365	3.6322	312.039	7.57	0.546	3755.58
EQUI132, EQUI133	STRU20	497,482.57	4,991,286.34	283.09	7.9365	3.6322	312.039	7.57	0.546	3755.58
EQUI134, EQUI135	~~STRU21~~ STRU75	497,468.95 ~~497,465.72~~	4,991,293.05 ~~4,991,293.31~~	283.09	7.9365	3.683	312.039	7.57	0.546	3755.58
EQUI136	STRU23	497,462.23	4,991,293.31	283.09	7.9365	3.683	312.039	7.57	0.546	3755.58
EQUI137, EQUI138	STRU24	497,449.23	4,991,294.27	283.09	7.9365	3.8608	312.039	7.57	0.546	3755.58
EQUI139, EQUI140	STRU25	497,428.18	4,991,284.88	283.09	7.9365	3.7592	312.039	7.57	0.546	3755.58
EQUI141-EQUI143, EQUI155	STRU26	497,427.99	4,991,275.47	283.09	7.9365	3.81	312.039	7.57	0.546	3755.58
EQUI146, EQUI158	STRU30	497,514.59	4,991,210.69	283.09	7.9365	5.2324	312.039	7.57	0.546	3755.58
EQUI147	STRU31	497,513.65	4,991,198.51	283.09	7.9365	5.1816	312.039	7.57	0.546	3755.58

Formatted Table
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt

Permit ID	AERMOD ID	Easting (m)	Northing (m)	Base_Elev (m)	Emission Rate (lb/hr)	Height (m)	Exit Temp (K)	Exit Vel (m/s)	Diam (m)	Flow rate (ACFM)
EQUI149, EQUI150	STRU32	497,495.07	4,991,190.04	283.09	7.9365	5.5118	312.039	7.57	0.546	3755.58
EQUI152, EQUI156	STRU33	497,489.65	4,991,190.16	283.09	7.9365	5.334	312.039	7.57	0.546	3755.58
EQUI153, EQUI154	STRU34	497,482.45	4,991,191.19	283.09	7.9365	5.2324	312.039	7.57	0.546	3755.58
EQUI160, EQUI117	STRU35	497,540.87	4,990,864.07	280.55	7.9365	7.315	294.261	4.040	0.546	2,004
EQUI167	STRU41	497,479.00	4,991,262.00	283.09	7.9365	5.232	294.261	10.11442	0.2032	695
EQUI174	STRU59	497,507.89	4,991,240.39	283.09	7.9365	10.0584	294.261	9.665178	0.965701	15000
EQUI146, EQUI150, EQUI172, EQUI110, EQUI112	STRU53	497,505.64	4,991,216.93	283.09	7.9365	10.0584	294.261	9.665178	0.965701	15000
EQUI147, EQUI158, EQUI110, EQUI112	STRU52	497,503.83	4,991,197.29	283.09	7.9365	10.0584	294.261	9.665178	0.965701	15000
EQUI149, EQUI152, EQUI154, EQUI156, EQUI110, EQUI112	STRU51	497,488.75	4,991,198.93	283.09	7.9365	10.0584	294.261	9.665178	0.965701	15000
EQUI153, EQUI157, EQUI110, EQUI112	STRU56	497,483.11	4,991,219.35	283.09	7.9365	10.0584	294.261	9.665178	0.965701	15000
		497485.5	4991242.5							
STRU60	STRU60	~~497,474.10~~	~~4,991,285.55~~	283.09	7.9365	10.0584	294.261	9.665178	0.965701	15000
EQUI130-EQUI136, EQUI107, EQUI108, EQUI111	STRU44	497474.1	4991285.6							
		~~497,436.71~~	~~4,991,287.76~~	283.09	7.9365	7.9248	294.261	12.41206	1.100146	25000
EQUI137-EQUI141, EQUI107, EQUI108, EQUI111	STRU45	497436.71	4991287.76							
		~~497,436.01~~	~~4,991,275.77~~	283.09	7.9365	7.9248	294.261	12.41206	1.100146	25000
EQUI142, EQUI143, EQUI155, EQUI107, EQUI108, EQUI111	STRU46	497436.01	4991275.77							
		~~497,475.70~~	~~4,991,257.67~~	283.09	7.9365	7.9248	294.261	12.41206	1.100146	25000
EQUI127-EQUI129, EQUI106, EQUI108	STRU47	497475.70	4991257.67							
		~~497,474.48~~	~~4,991,250.50~~	283.09	7.9365	7.0104	294.261	9.665178	0.965701	15000

Formatted Table
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt

Permit ID	AERMOD ID	Easting (m)	Northing (m)	Base_Elev (m)	Emission Rate (lb/hr)	Height (m)	Exit Temp (K)	Exit Vel (m/s)	Diam (m)	Flow rate (ACFM)
EQUI121, EQUI122, EQUI106, EQUI109	STRU48	497474.48 ~~497,473.85~~	4991250.50 ~~4,991,241.55~~	283.09	7.9365	7.0104	294.261	9.665178	0.965701	15000
EQUI123, EQUI106, EQUI109	STRU49	497473.85 ~~497,471.27~~	4991241.55 ~~4,991,218.35~~	283.09	7.9365	7.0104	294.261	9.665178	0.965701	15000
EQUI125, EQUI126, EQUI115, EQUI116, EQUI109	STRU50	497471.27 ~~497,473.47~~	4991218.35 ~~4,991,236.42~~	283.09	7.9365	7.0104	294.261	9.665178	0.965701	15000
EQUI124, EQUI115, EQUI106, EQUI109	STRU43	497473.47 ~~497,458.94~~	4991236.42 ~~4,991,211.27~~	283.09	7.9365	7.010	294.261	9.665	0.966	15,000
EQUI113, EQUI114	STRU57	497458.94 ~~497,504.16~~	4991211.27 ~~4,991,222.33~~	283.09	7.9365	9.144	294.261	6.096	0.419	50
EQUI101, EQUI102, EQUI104	STRU68	497504.16 ~~497,511.72~~	4991222.33 ~~4,991,232.43~~	283.09	7.9365	10.820	307.650	2.752	0.889	3,619
EQUI103	STRU69	497511.72 ~~497,499.20~~	4991232.43 ~~4,991,225.76~~	283.09	7.9365	10.912	398.872	6.087	0.203	418
EQUI222	STRU70	497499.20 ~~497,551.22~~	4991225.76 ~~4,990,875.54~~	283.09 ~~280.55~~	7.9365	10.973	352.594	7.991	0.229	695
EQUI223-EQUI232	STRU71	497551.22 ~~497,511.46~~	4990875.54 ~~4,990,881.57~~	280.55	7.9365	6.401	301.483	2.815	0.716	2,400
EQUI240	STRU72	497,511.46	4,990,881.57	280.55	7.9365	6.401	294.261	16.024	0.274	2,000

Formatted Table

Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt
Formatted: Font: 9 pt

Volume Source Parameters:

Table C5: STRU 67 and 68 (PM10, PM2.5, NOx, and Lead)

Permit ID	AERMOD ID	Pollutant	Averaging time	Easting (m)	0Northing (m)	Base Elev (m)	Emission Rate (lb/hr)	Height (m)	Lateral dimension (m)	Vertical dimension (m)	Length X (m)
COMG10	NBLDGIA	PM2.5	24-hour; Annual	497,473.68	4,991,235.04	283.09	0.0797	7.62	22.10	3.544	95.04
		PM10	24-hour	497,473.68	4,991,235.04	283.09	0.0797	7.62	22.10	3.544	95.04
		NOX	1-hour, annual	497,473.68	4,991,235.04	283.09	1.0482	7.62	22.10	3.544	95.04
		Lead	Qtr	497,473.68	4,991,235.04	283.09	5.24E-06	7.62	22.10	3.544	95.04
COMG15	SBLDGIA	PM2.5	24-hour; Annual	497,533.39	4,990,886.29	281	0.0171	5.49	11.89	2.553	51.12
		PM10	24-hour	497,533.39	4,990,886.29	281	0.0171	5.49	11.89	2.553	51.12
		NOX	1-hour, annual	497,533.39	4,990,886.29	281	0.2248	5.49	11.89	2.553	51.12
		Lead	Qtr	497,533.39	4,990,886.29	281	1.12E-06	5.49	11.89	2.553	51.12

Table C6: PM10 Volume source (24-hr)

Permit ID	AERMOD ID	Easting [m]	Northing [m]	Base Elev [m]	Emission Rate (lb/hr)	Height [m]	Lateral dimension [m]	Vertical dimension [m]	Length X [m]
FUGI 3	NBLDG1	497,444.50	4,991,196.93	282.04	7.76E-04	2.591	4.65	2.41	20.00
	NBLDG2	497,437.11	4,991,190.20	282.09	7.76E-04	2.591	4.65	2.41	20.00
	NBLDG3	497,429.71	4,991,183.47	281.84	7.76E-04	2.591	4.65	2.41	20.00
	NBLDG4	497,422.32	4,991,176.74	281.76	7.76E-04	2.591	4.65	2.41	20.00
	NBLDG5	497,414.92	4,991,170.00	281.51	7.76E-04	2.591	4.65	2.41	20.00

Permit ID	AERMOD ID	Easting [m]	Northing [m]	Base Elev [m]	Emission Rate (lb/hr)	Height [m]	Lateral dimension [m]	Vertical dimension [m]	Length X [m]
	NBLDG6	497,407.52	4,991,163.27	281.29	7.76E-04	2.591	4.65	2.41	20.00
	NBLDG7	497,400.13	4,991,156.54	281.11	7.76E-04	2.591	4.65	2.41	20.00
	NBLDG8	497,392.73	4,991,149.81	280.92	7.76E-04	2.591	4.65	2.41	20.00
	NBLDG9	497,385.34	4,991,143.08	280.7	7.76E-04	2.591	4.65	2.41	20.00
	NBLDG10	497,424.66	4,991,186.72	282.24	7.76E-04	2.591	4.65	2.41	20.00
	NBLDG11	497,416.16	4,991,184.85	282.67	7.76E-04	2.591	4.65	2.41	20.00
	NBLDG12	497,411.02	4,991,176.45	281.82	7.76E-04	2.591	4.65	2.41	20.00
	NBLDG13	497,437.24	4,991,342.90	283.36	3.51E-04	2.591	4.65	2.41	20.00
	NBLDG14	497,443.20	4,991,335.54	283.3	3.51E-04	2.591	4.65	2.41	20.00
FUGI 3	NBLDG15	497,451.65	4,991,330.18	283.17	3.51E-04	2.591	4.65	2.41	20.00
	NBLDG16	497,459.55	4,991,324.08	283.12	3.51E-04	2.591	4.65	2.41	20.00
	NBLDG17	497,467.24	4,991,317.68	283.04	3.51E-04	2.591	4.65	2.41	20.00
	NBLDG18	497,473.27	4,991,309.72	283.02	3.51E-04	2.591	4.65	2.41	20.00
	NBLDG19	497,479.35	4,991,301.78	283	3.51E-04	2.591	4.65	2.41	20.00
	NBLDG20	497,485.60	4,991,293.97	283.07	3.51E-04	2.591	4.65	2.41	20.00
	NBLDG21	497,491.84	4,991,286.16	283.01	3.51E-04	2.591	4.65	2.41	20.00
	NBLDG22	497,496.17	4,991,277.16	282.95	3.51E-04	2.591	4.65	2.41	20.00
	NBLDG23	497,500.40	4,991,268.10	282.86	3.51E-04	2.591	4.65	2.41	20.00
	SBLDG1	497,426.24	4,991,037.50	279.11	3.18E-04	2.628	4.651	2.444	20.000

Permit ID	AERMOD ID	Easting [m]	Northing [m]	Base Elev [m]	Emission Rate (lb/hr)	Height [m]	Lateral dimension [m]	Vertical dimension [m]	Length X [m]
FUGI 3	SBLDG2	497,435.79	4,991,040.46	279.31	3.18E-04	2.628	4.651	2.444	20.000
	SBLDG3	497,445.34	4,991,043.42	279.43	3.18E-04	2.628	4.651	2.444	20.000
	SBLDG4	497,454.89	4,991,046.38	279.65	3.18E-04	2.628	4.651	2.444	20.000
	SBLDG5	497,464.44	4,991,049.34	279.83	3.18E-04	2.628	4.651	2.444	20.000
	SBLDG6	497,474.00	4,991,052.30	279.88	3.18E-04	2.628	4.651	2.444	20.000
	SBLDG7	497,483.55	4,991,055.27	280.01	3.18E-04	2.628	4.651	2.444	20.000
	SBLDG8	497,493.10	4,991,058.23	280.18	3.18E-04	2.628	4.651	2.444	20.000
	SBLDG9	497,502.65	4,991,061.19	280.31	3.18E-04	2.628	4.651	2.444	20.000
	SBLDG10	497,512.20	4,991,064.15	280.32	3.18E-04	2.628	4.651	2.444	20.000
	SBLDG11	497,521.86	4,991,066.00	280.29	3.18E-04	2.628	4.651	2.444	20.000
	SBLDG12	497,531.80	4,991,064.90	280.27	3.18E-04	2.628	4.651	2.444	20.000
	SBLDG13	497,541.74	4,991,063.79	280.22	3.18E-04	2.628	4.651	2.444	20.000
	SBLDG14	497,549.69	4,991,057.89	280.26	3.18E-04	2.628	4.651	2.444	20.000
	SBLDG15	497,556.70	4,991,050.97	280.37	3.18E-04	2.628	4.651	2.444	20.000
	SBLDG16	497,561.65	4,991,042.28	280.44	3.18E-04	2.628	4.651	2.444	20.000
	SBLDG17	497,566.38	4,991,033.49	280.48	3.18E-04	2.628	4.651	2.444	20.000
	SBLDG18	497,569.44	4,991,023.97	280.62	3.18E-04	2.628	4.651	2.444	20.000
	SBLDG19	497,572.50	4,991,014.45	280.73	3.18E-04	2.628	4.651	2.444	20.000
	SBLDG20	497,575.56	4,991,004.93	280.74	3.18E-04	2.628	4.651	2.444	20.000

Permit ID	AERMOD ID	Easting [m]	Northing [m]	Base Elev [m]	Emission Rate (lb/hr)	Height [m]	Lateral dimension [m]	Vertical dimension [m]	Length X [m]
	SBLDG21	497,578.61	4,990,995.41	280.73	3.18E-04	2.628	4.651	2.444	20.000
	SBLDG22	497,581.67	4,990,985.89	280.73	3.18E-04	2.628	4.651	2.444	20.000
	SBLDG23	497,584.73	4,990,976.37	280.6	3.18E-04	2.628	4.651	2.444	20.000
	SBLDG24	497,587.79	4,990,966.84	280.41	3.18E-04	2.628	4.651	2.444	20.000
	SBLDG25	497,590.84	4,990,957.32	280.37	3.18E-04	2.628	4.651	2.444	20.000
	SBLDG26	497,593.90	4,990,947.80	280.39	2.44E-04	2.628	4.651	2.444	20.000
	SBLDG27	497,596.96	4,990,938.28	280.49	2.44E-04	2.628	4.651	2.444	20.000
	SBLDG28	497,600.02	4,990,928.76	280.5	2.44E-04	2.628	4.651	2.444	20.000
	SBLDG29	497,603.07	4,990,919.24	280.66	2.44E-04	2.628	4.651	2.444	20.000
FUGI 3	SBLDG30	497,606.13	4,990,909.72	280.86	2.44E-04	2.628	4.651	2.444	20.000
	SBLDG31	497,609.19	4,990,900.20	280.91	1.78E-04	2.628	4.651	2.444	20.000
	SBLDG32	497,610.96	4,990,890.61	280.91	1.78E-04	2.628	4.651	2.444	20.000
	SBLDG33	497,606.68	4,990,882.39	281.17	1.78E-04	2.628	4.651	2.444	20.000
	SBLDG34	497,598.18	4,990,877.12	281.31	1.78E-04	2.628	4.651	2.444	20.000
	SBLDG35	497,589.51	4,990,872.22	281.22	1.78E-04	2.628	4.651	2.444	20.000
	SBLDG36	497,580.01	4,990,869.07	281.17	1.78E-04	2.628	4.651	2.444	20.000
	SBLDG37	497,570.52	4,990,865.92	281.04	1.78E-04	2.628	4.651	2.444	20.000
	SBLDG38	497,561.03	4,990,862.78	280.95	1.78E-04	2.628	4.651	2.444	20.000
	SBLDG39	497,551.54	4,990,859.63	280.72	1.78E-04	2.628	4.651	2.444	20.000

Permit ID	AERMOD ID	Easting [m]	Northing [m]	Base Elev [m]	Emission Rate (lb/hr)	Height [m]	Lateral dimension [m]	Vertical dimension [m]	Length X [m]
FUGI 3	SBLDG40	497,542.05	4,990,856.48	280.59	1.78E-04	2.628	4.651	2.444	20.000
	SBLDG41	497,532.56	4,990,853.33	280.53	1.78E-04	2.628	4.651	2.444	20.000
	SBLDG42	497,523.06	4,990,850.18	280.55	1.78E-04	2.628	4.651	2.444	20.000
	SBLDG43	497,513.45	4,990,849.29	280.53	1.78E-04	2.628	4.651	2.444	20.000
	SBLDG44	497,503.81	4,990,851.78	280.5	1.78E-04	2.628	4.651	2.444	20.000
	SBLDG45	497,494.75	4,990,855.56	280.51	1.78E-04	2.628	4.651	2.444	20.000
	SBLDG46	497,485.14	4,990,852.82	280.47	1.78E-04	2.628	4.651	2.444	20.000
	SBLDG47	497,564.36	4,990,944.84	281.03	4.22E-04	2.628	4.651	2.444	20.000
	SBLDG48	497,573.84	4,990,948.00	280.92	4.22E-04	2.628	4.651	2.444	20.000
	SBLDG49	497,583.33	4,990,951.17	280.62	4.22E-04	2.628	4.651	2.444	20.000
	SBLDG50	497,580.96	4,990,897.97	281.11	4.22E-04	2.628	4.651	2.444	20.000
	SBLDG51	497,590.41	4,990,901.26	281.31	4.22E-04	2.628	4.651	2.444	20.000
	SBLDG52	497,599.85	4,990,904.55	281.31	4.22E-04	2.628	4.651	2.444	20.000

Table C7: PM2.5 Volume source (24-hr, Annual)

Permit ID	AERMOD ID	Easting [m]	Northing [m]	Base Elev [m]	Emission Rate (lb/hr)	Height [m]	Lateral dimension [m]	Vertical dimension [m]	Length_X [m]
FUGI 3	NBLDG1	497,444.50	4,991,196.93	282.04	1.91E-04	2.591	4.651	2.41	20.000
	NBLDG2	497,437.11	4,991,190.20	282.09	1.91E-04	2.591	4.651	2.41	20.000
	NBLDG3	497,429.71	4,991,183.47	281.84	1.91E-04	2.591	4.651	2.41	20.000

Permit ID	AERMOD ID	Easting [m]	Northing [m]	Base Elev [m]	Emission Rate (lb/hr)	Height [m]	Lateral dimension [m]	Vertical dimension [m]	Length_X [m]
	NBLDG4	497,422.32	4,991,176.74	281.76	1.91E-04	2.591	4.651	2.41	20.000
	NBLDG5	497,414.92	4,991,170.00	281.51	1.91E-04	2.591	4.651	2.41	20.000
	NBLDG6	497,407.52	4,991,163.27	281.29	1.91E-04	2.591	4.651	2.41	20.000
	NBLDG7	497,400.13	4,991,156.54	281.11	1.91E-04	2.591	4.651	2.41	20.000
	NBLDG8	497,392.73	4,991,149.81	280.92	1.91E-04	2.591	4.651	2.41	20.000
	NBLDG9	497,385.34	4,991,143.08	280.7	1.91E-04	2.591	4.651	2.41	20.000
	NBLDG10	497,424.66	4,991,186.72	282.24	1.91E-04	2.591	4.651	2.41	20.000
	NBLDG11	497,416.16	4,991,184.85	282.67	1.91E-04	2.591	4.651	2.41	20.000
	NBLDG12	497,411.02	4,991,176.45	281.82	1.91E-04	2.591	4.651	2.41	20.000
	NBLDG13	497,437.24	4,991,342.90	283.36	8.61E-05	2.591	4.651	2.41	20.000
	NBLDG14	497,443.20	4,991,335.54	283.3	8.61E-05	2.591	4.651	2.41	20.000
	NBLDG15	497,451.65	4,991,330.18	283.17	8.61E-05	2.591	4.651	2.41	20.000
	NBLDG16	497,459.55	4,991,324.08	283.12	8.61E-05	2.591	4.651	2.41	20.000
FUGI 3	NBLDG17	497,467.24	4,991,317.68	283.04	8.61E-05	2.591	4.651	2.41	20.000
	NBLDG18	497,473.27	4,991,309.72	283.02	8.61E-05	2.591	4.651	2.41	20.000
	NBLDG19	497,479.35	4,991,301.78	283	8.61E-05	2.591	4.651	2.41	20.000
	NBLDG20	497,485.60	4,991,293.97	283.07	8.61E-05	2.591	4.651	2.41	20.000
	NBLDG21	497,491.84	4,991,286.16	283.01	8.61E-05	2.591	4.651	2.41	20.000
	NBLDG22	497,496.17	4,991,277.16	282.95	8.61E-05	2.591	4.651	2.41	20.000
	NBLDG23	497,500.40	4,991,268.10	282.86	8.61E-05	2.591	4.651	2.41	20.000
	SBLDG1	497,426.24	4,991,037.50	279.11	7.81E-05	2.628	4.651	2.444	20.000
	SBLDG2	497,435.79	4,991,040.46	279.31	7.81E-05	2.628	4.651	2.444	20.000
	SBLDG3	497,445.34	4,991,043.42	279.43	7.81E-05	2.628	4.651	2.444	20.000
	SBLDG4	497,454.89	4,991,046.38	279.65	7.81E-05	2.628	4.651	2.444	20.000
	SBLDG5	497,464.44	4,991,049.34	279.83	7.81E-05	2.628	4.651	2.444	20.000
	SBLDG6	497,474.00	4,991,052.30	279.88	7.81E-05	2.628	4.651	2.444	20.000
	SBLDG7	497,483.55	4,991,055.27	280.01	7.81E-05	2.628	4.651	2.444	20.000

Permit ID	AERMOD ID	Easting [m]	Northing [m]	Base Elev [m]	Emission Rate (lb/hr)	Height [m]	Lateral dimension [m]	Vertical dimension [m]	Length_X [m]
	SBLDG8	497,493.10	4,991,058.23	280.18	7.81E-05	2.628	4.651	2.444	20.000
	SBLDG9	497,502.65	4,991,061.19	280.31	7.81E-05	2.628	4.651	2.444	20.000
	SBLDG10	497,512.20	4,991,064.15	280.32	7.81E-05	2.628	4.651	2.444	20.000
	SBLDG11	497,521.86	4,991,066.00	280.29	7.81E-05	2.628	4.651	2.444	20.000
	SBLDG12	497,531.80	4,991,064.90	280.27	7.81E-05	2.628	4.651	2.444	20.000
	SBLDG13	497,541.74	4,991,063.79	280.22	7.81E-05	2.628	4.651	2.444	20.000
	SBLDG14	497,549.69	4,991,057.89	280.26	7.81E-05	2.628	4.651	2.444	20.000
	SBLDG15	497,556.70	4,991,050.97	280.37	7.81E-05	2.628	4.651	2.444	20.000
	SBLDG16	497,561.65	4,991,042.28	280.44	7.81E-05	2.628	4.651	2.444	20.000
	SBLDG17	497,566.38	4,991,033.49	280.48	7.81E-05	2.628	4.651	2.444	20.000
	SBLDG18	497,569.44	4,991,023.97	280.62	7.81E-05	2.628	4.651	2.444	20.000
	SBLDG19	497,572.50	4,991,014.45	280.73	7.81E-05	2.628	4.651	2.444	20.000
	SBLDG20	497,575.56	4,991,004.93	280.74	7.81E-05	2.628	4.651	2.444	20.000
FUGI 3	SBLDG21	497,578.61	4,990,995.41	280.73	7.81E-05	2.628	4.651	2.444	20.000
	SBLDG22	497,581.67	4,990,985.89	280.73	7.81E-05	2.628	4.651	2.444	20.000
	SBLDG23	497,584.73	4,990,976.37	280.6	7.81E-05	2.628	4.651	2.444	20.000
	SBLDG24	497,587.79	4,990,966.84	280.41	7.81E-05	2.628	4.651	2.444	20.000
	SBLDG25	497,590.84	4,990,957.32	280.37	7.81E-05	2.628	4.651	2.444	20.000
	SBLDG26	497,593.90	4,990,947.80	280.39	6.00E-05	2.628	4.651	2.444	20.000
	SBLDG27	497,596.96	4,990,938.28	280.49	6.00E-05	2.628	4.651	2.444	20.000
	SBLDG28	497,600.02	4,990,928.76	280.5	6.00E-05	2.628	4.651	2.444	20.000
	SBLDG29	497,603.07	4,990,919.24	280.66	6.00E-05	2.628	4.651	2.444	20.000
	SBLDG30	497,606.13	4,990,909.72	280.86	6.00E-05	2.628	4.651	2.444	20.000
	SBLDG31	497,609.19	4,990,900.20	280.91	4.38E-05	2.628	4.651	2.444	20.000
	SBLDG32	497,610.96	4,990,890.61	280.91	4.38E-05	2.628	4.651	2.444	20.000
	SBLDG33	497,606.68	4,990,882.39	281.17	4.38E-05	2.628	4.651	2.444	20.000
	SBLDG34	497,598.18	4,990,877.12	281.31	4.38E-05	2.628	4.651	2.444	20.000

Permit ID	AERMOD ID	Easting [m]	Northing [m]	Base Elev [m]	Emission Rate (lb/hr)	Height [m]	Lateral dimension [m]	Vertical dimension [m]	Length_X [m]
FUGI 3	SBLDG35	497,589.51	4,990,872.22	281.22	4.38E-05	2.628	4.651	2.444	20.000
	SBLDG36	497,580.01	4,990,869.07	281.17	4.38E-05	2.628	4.651	2.444	20.000
	SBLDG37	497,570.52	4,990,865.92	281.04	4.38E-05	2.628	4.651	2.444	20.000
	SBLDG38	497,561.03	4,990,862.78	280.95	4.38E-05	2.628	4.651	2.444	20.000
	SBLDG39	497,551.54	4,990,859.63	280.72	4.38E-05	2.628	4.651	2.444	20.000
	SBLDG40	497,542.05	4,990,856.48	280.59	4.38E-05	2.628	4.651	2.444	20.000
	SBLDG41	497,532.56	4,990,853.33	280.53	4.38E-05	2.628	4.651	2.444	20.000
	SBLDG42	497,523.06	4,990,850.18	280.55	4.38E-05	2.628	4.651	2.444	20.000
	SBLDG43	497,513.45	4,990,849.29	280.53	4.38E-05	2.628	4.651	2.444	20.000
	SBLDG44	497,503.81	4,990,851.78	280.5	4.38E-05	2.628	4.651	2.444	20.000
	SBLDG45	497,494.75	4,990,855.56	280.51	4.38E-05	2.628	4.651	2.444	20.000
	SBLDG46	497,485.14	4,990,852.82	280.47	4.38E-05	2.628	4.651	2.444	20.000
	SBLDG47	497,564.36	4,990,944.84	281.03	1.04E-04	2.628	4.651	2.444	20.000
	SBLDG48	497,573.84	4,990,948.00	280.92	1.04E-04	2.628	4.651	2.444	20.000
	SBLDG49	497,583.33	4,990,951.17	280.62	1.04E-04	2.628	4.651	2.444	20.000
	SBLDG50	497,580.96	4,990,897.97	281.11	1.04E-04	2.628	4.651	2.444	20.000
	SBLDG51	497,590.41	4,990,901.26	281.31	1.04E-04	2.628	4.651	2.444	20.000
	SBLDG52	497,599.85	4,990,904.55	281.31	1.04E-04	2.628	4.651	2.444	20.000

Appendix D. Emission factors for lead processing units

Table D.1 below specifies the emission factors to be used in calculation of stack and fugitive emissions from lead processing units as required by the permit. The permit also requires recurring performance testing at each stack to verify emission factors to be used in calculation of stack and fugitive emissions from each lead processing unit. The Permittee shall keep this appendix up to date with emission factors derived from the most-recent MPCA-approved performance test results.

Table D.1: List of emission factors for lead processing units

Emission Unit ID	Emission Unit Description	Nederman ID	Smog Hog ID	Stack/ Vent ID	Uncontrolled PM (lb/lb Lead-Containing Material)	Uncontrolled PM10/PM2.5 (lb/lb Lead-Containing Material)	Uncontrolled Lead (lb/lb Lead-Containing Material)	Controlled Lead[1] (lb/lb Lead-Containing Material)
EQUI 101	CF Scrap Re-Melt Pot	TREA 60	TREA 1	STRU 1	$3.37x10^{-4}$	$3.41x10^{-4}$	$1.05x10^{-7}$	$4.46x10^{-8}$
EQUI 102	Small Re-Melt Pot	TREA 60	TREA 1	STRU 1	$3.37x10^{-4}$	$3.41x10^{-4}$	$1.28x10^{-7}$	$4.46x10^{-8}$
EQUI 103	Doe Run Melt Pot	TREA 60	TREA 1	STRU 1	$3.37x10^{-4}$	$3.41x10^{-4}$	$1.28x10^{-7}$	$4.46x10^{-8}$
EQUI 104	CF Re-Melt Pot	TREA 60	TREA 1	STRU 1	$3.37x10^{-4}$	$3.41x10^{-4}$	$1.28x10^{-7}$	$4.46x10^{-8}$
EQUI 121	Die Cast (DC09)	TREA 61	TREA 25	STRU 15	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 122	Die Cast (DC12)	TREA 61	TREA 25	STRU 15	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 123	Die Cast (DC33)	TREA 61	TREA 25	STRU 15	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 124	Die Cast (DC14)	TREA 63	TREA 26	STRU 16	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 125	Die Cast (DC15)	TREA 63	TREA 26	STRU 16	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 126	Die Cast (DC21)	TREA 62	TREA 26	STRU 16	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 127	Die Cast (DC08)	TREA 64	TREA 27	STRU 17	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 128	Die Cast (DC10)	TREA 64	TREA 27	STRU 17	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 129	Die Cast (DC17)	TREA 64	TREA 27	STRU 17	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 130	Die Cast (DC18)	TREA 65	TREA 78	STRU 74	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 131	Die Cast (DC36)	TREA 65	TREA 78	STRU 74	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 132	Die Cast (DC37)	TREA 66	TREA 30	STRU 20	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 133	Die Cast (DC25)	TREA 66	TREA 30	STRU 20	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 134	Die Cast (DC22)	TREA 67	TREA 79	STRU 75	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 135	Die Cast (DC35)	TREA 67	TREA 79	STRU 75	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 136	Die Cast (DC32)	TREA 68	TREA 33	STRU 23	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 137	Die Cast (DC26)	TREA 69	TREA 34	STRU 24	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 138	Die Cast (DC27)	TREA 69	TREA 34	STRU 24	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 139	Die Cast (DC16)	TREA 70	TREA 35	STRU 25	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 140	Die Cast (DC28)	TREA 70	TREA 35	STRU 25	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 141	Die Cast (DC29)	TREA 71	TREA 36	STRU 26	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 142	Die Cast (DC19)	TREA 72	TREA 36	STRU 26	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 143	Die Cast (DC34)	TREA 71	TREA 36	STRU 26	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 146	Die Cast (DC42)	TREA 73	TREA 39	STRU 30	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 147	Die Cast (DC38)	TREA 74	TREA 40	STRU 31	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 149	Die Cast (DC40)	TREA 75	TREA 41	STRU 32	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 150	Die Cast (DC48)	TREA 75	TREA 41	STRU 32	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$

Emission Unit ID	Emission Unit Description	Nederman ID	Smog Hog ID	Stack/ Vent ID	Uncontrolled PM (lb/lb Lead-Containing Material)	Uncontrolled PM10/PM2.5 (lb/lb Lead-Containing Material)	Uncontrolled Lead (lb/lb Lead-Containing Material)	Controlled Lead[1] (lb/lb Lead-Containing Material)
EQUI 152	Die Cast (DC41)	TREA 76	TREA 42	STRU 33	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 153	Die Cast (DC44)	TREA 77	TREA 43	STRU 34	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 154	Die Cast (DC45)	TREA 77	TREA 43	STRU 34	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 155	Die Cast (DC52)	TREA 72	TREA 36	STRU 26	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 156	Die Cast (DC50)	TREA 76	TREA 42	STRU 33	$1.89x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 157	Die Cast (DC51)	TREA 62	TREA 26	STRU 16	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 158	Die Cast (DC53)	TREA 73	TREA 39	STRU 30	$1.95x10^{-4}$	$1.95x10^{-4}$	$2.15x10^{-6}$	$6.13x10^{-7}$
EQUI 160	Billet Saw	N/A	N/A	STRU 35	$4.41x10^{-6}$	$2.25x10^{-6}$	$4.41x10^{-6}$	$4.41x10^{-6}$
EQUI 221	Tin Melt Pot	TREA 60	TREA 1	STRU 1	$3.37x10^{-4}$	$3.41x10^{-4}$	N/A	N/A

[1] At the time of permit issuance, the emission factors in Table D.1 are based on recent applicable stack tests at the inlet to emission stacks or control equipment and are applied to similar process equipment. For diecast operations, capture efficiency to the inlet of control equipment is assumed to be 95% and therefore the measured emission factors at the inlet of the pollution control equipment must be divided by 0.95 to represent the total uncontrolled emissions. The die casting uncontrolled emission factors in table D.1 represent this correction to the stack testing measurements at the inlet of the control equipment. After diecast stack tests are conducted, emission factors will be updated here and in recordkeeping calculations.

Appendix E. Performance test operating conditions and recordkeeping

1. VOC and particulate matter stack testing for UV coaters (STRU 73 or at each individual coater).

This protocol applies if the Permittee wishes to revise the approved emission factors for spray UV coaters in Appendix B.

1.1 Pollutants and emission rates

1.1.1 Test for total particulate matter, and report as grains per dry standard cubic foot. Testing must include organic and inorganic condensable particulate matter. The test method must be approved as part of the test plan.

1.1.2 Test for PM_{10}, and report results as an emission rate, in pound PM_{10} per hour, and as an emission factor, in pound PM_{10} per pound of coating (as applied). This test should be done concurrently with the test for $PM_{2.5}$ and must include organic and inorganic condensable particulate matter. The test method must be approved as part of the test plan.

1.1.3 Test for $PM_{2.5}$, and report results as an emission rate, in pound $PM_{2.5}$ per hour, and as an emission factor, in pound $PM_{2.5}$ per pound of coating (as applied). This test should be done concurrently with the test for PM_{10} and must include organic and inorganic condensable particulate matter. The test method must be approved as part of the test plan.

1.1.4 Test for VOC, and report as pound VOC per hour and pound VOC per pound of coating (as applied). The test method must be approved as part of the test plan.

1.1.5 Test for overall control efficiency of control equipment, if applicable. The test method must be approved as part of the test plan.

1.2 Operating conditions

1.2.1 The only spray coating operation allowed during the VOC and particulate matter test are UV coaters.

1.2.2 During the VOC test, no 1,2-(trans-) Dichloroethylene VOC coating operations may occur.

1.2.3 If testing at STRU 73, the coating room must be operated during the test in compliance with pressure drop limits, door status, and proper operation of the alarm system.

1.2.4 If testing an individual coater, the permittee must submit a test plan for approval for the sampling location and configuration to ensure the emissions are properly sampled at the individual coater.

1.2.5 The Permittee shall target worst-case conditions to be allowed by the permit, including coating application rate and coating solids content.

1.3 Operating records

The following operating records shall be recorded, including calculations, during the time of each test run:

1.3.1 The amount of UV coating applied, in pound per hour, during each test run for each coater in operation.

1.3.2 The total amount of UV coating applied, in pound per hour, during each test run.

1.3.3 Type of parts being coated by each coater during the test.

1.3.4 During the particulate test, list the other coating operations running at the time of the test.

1.3.5 During the VOC test, list the other coating operations running at the time of the test, including operating rates.

1.3.6 If testing at STRU 73, pressure drop readings in the coating room, the door status, and daily alarm verification. The report must include reports of any deviation from the approved minimum pressure

drop and door status at the beginning and end of each test run, and if an alarm is triggered during any test run.

1.3.7 The specific UV coating applied during the test.

1.3.8 If testing for control efficiency or controlled emission factor, the conditions of operation of control equipment based on required permit operating parameters for the control equipment.

1.4 Test results

1.4.1 The results of the test must be reported as an emissions rate, in pounds per hour, and as an emission factor, in pound pollutant per pound of coating (as applied) and in pound pollutant per pound solids (as applied).

2. Particulate matter and 1,2-(trans-) Dichloroethylene stack testing for 1,2-(trans-) Dichloroethylene VOC spray coaters (STRU 73)

This protocol applies if the Permittee wishes to revise the approved emission factors for 1,2-(trans-) Dichloroethylene VOC coaters in Appendix B.

2.1 Pollutants and emission rates

2.1.1 Test for total particulate matter, and report as grains per dry standard cubic foot. Testing must include organic and inorganic condensable matter. The test method must be approved as part of the test plan.

2.1.2 Test for PM_{10}, and report results as an emission rate, in pound PM_{10} per hour, and as a transfer efficiency based on test results, in pound PM_{10} per pound of solids (as applied). This test should be done concurrently with the test for $PM_{2.5}$. It must include organic and inorganic condensable matter. The test method must be approved as part of the test plan.

2.1.3 Test for $PM_{2.5}$, and report results as an emission rate, in pound $PM_{2.5}$ per hour, and as a transfer efficiency based on test results, in pound $PM_{2.5}$ per pound of solids (as applied). This test should be done concurrently with the test for PM_{10}. It must include organic and inorganic condensable matter. The test method must be approved as part of the test plan.

2.1.4 1,2-(trans-) Dichloroethylene, in pound per hour and pound VOC per pound of coating (as applied), as measured by the stack test method that speciates for 1,2-(trans-) Dichloroethylene. The test method must be approved as part of the test plan.

~~2.1.5 Continuous emission monitor (CEM) emission rates shall be reported as parts per million, wet VOC, parts per million, wet 1,2 (trans) Dichloroethylene (show conversion based on molecular weights), and pound per hour 1,2 (trans) Dichloroethylene by using measured concentrations and measured flue gas rates during the test. The measurements must specifically measure concentration during the time of each of the stack test runs conducted that speciates for 1,2-(trans-) Dichloroethylene.~~

~~2.1.6~~2.1.5 Test for overall control efficiency of control equipment, if applicable. The test method must be approved as part of the test plan.

Commented [A499]: See previous comments and comment letter.

2.2 Operating Conditions

2.2.1 If at all possible, only 1,2-(trans-) Dichloroethylene coaters should be operated during the test.

2.2.2 The coating rooms must be operated during the test in compliance with pressure drop limits, door status, and proper operation of the alarm system.

2.2.3 The Permittee shall target worst-case conditions to be allowed by the permit.

2.3 Operating records

The following operating records shall be recorded during the time of each testing run, including calculations:

2.3.1 Identification of each of the 1,2-(trans-) Dichloroethylene coaters in operation during the test, specifying the type of coater in operation (spray or dip/drip).

2.3.2 The amount of 1,2-(trans-) Dichloroethylene coating applied, in pound per hour, by each of the spray coaters operating during the test.

2.3.3 The total amount of 1,2-(trans-) Dichloroethylene coating applied by spraying, in pound per hour, during the test.

2.3.4 The amount of 1,2-(trans-) Dichloroethylene coating applied, in pound per hour, by each of the dip/drip coaters operating during the test.

2.3.5 Type of parts being coated by each coater during the test.

2.3.6 List the other non-1,2-(trans-) Dichloroethylene coating operations running at the time of the test.

2.3.7 Pressure drop readings in the coating room, the door status, and daily alarm verification. The report must also include records any deviation from the approved minimum pressure drop, and door status at the beginning and end of each test run, and if an alarm is triggered during any test run.

2.4 Test results

2.4.1 The results of the stack test must be reported as an emissions rate, in pounds per hour, and as a transfer efficiency based on test results, in pound PM_{10} per pound of solids by spray coating (as applied).

2.4.2 The results of the stack test must be reported as an emissions rate, in pounds per hour, and as a transfer efficiency based on test results, in pound $PM_{2.5}$ per pound of solids by spray coating (as applied).

2.4.3 The results of the stack test must be reported as an emissions rate, in pounds per hour, and in pound 1,2-(trans-) Dichloroethylene per pound of 1,2-(trans-) Dichloroethylene coating (as applied).

2.4.4 The results of the concurrent CEM measurements shall be reported as described in Section 2.1.5 above.

3. Particulate matter stack testing for water-based spray coaters (STRU 73 or at each individual coater)

This protocol applies if the Permittee wishes to revise the approved emission factors for water-based coaters in Appendix B.

3.1 Pollutants and emission rates

3.1.1 Test for total particulate matter, and report as grains per dry standard cubic foot. Testing must include organic and inorganic condensable matter. The test method must be approved as part of the test plan.

3.1.2 Test for PM_{10}, and report results as an emission rate, in pound PM_{10} per hour, and as a transfer efficiency based on test results, in pound PM_{10} per pound of solids (as applied). This test should be done concurrently with the test for $PM_{2.5}$. It must include organic and inorganic condensable matter. The test method must be approved as part of the test plan.

3.1.3 Test for $PM_{2.5}$, and report results as an emission rate, in pound $PM_{2.5}$ per hour and as a transfer efficiency based on test results, in pound $PM_{2.5}$ per pound of solids (as applied). This test should be done concurrently with the test for PM_{10}. It must include organic and inorganic condensable matter. The test method must be approved as part of the test plan.

3.1.4 Test for overall control efficiency of control equipment, if applicable. The test method must be approved as part of the test plan.

3.2 Operating Conditions

3.2.1 During the tests, the only operation(s) allowed during the test are the water-based spray units.

3.2.2 If at all possible, all authorized water-based spray coaters must be online at the time of the test and the applied coatings must represent the highest range of solid content used.

3.2.3 If testing at STRU 73, the coating room must be operated during the test in compliance with pressure drop limits, door status, and proper operation of the alarm system.

3.2.4 If testing an individual coater, the permittee must submit a test plan for approval for the sampling location and configuration to ensure the emissions are properly sampled at the individual coater.

3.2.5 The Permittee shall target worst-case conditions to be allowed by the permit, including coating application rates and coating solids content.

3.3 Operating records

The following operating records shall be recorded during the time of each testing run, including calculations:

3.3.1 Identification of each water-based spray coater in operation during the test.

3.3.2 The amount of water-based coating applied, in pound per hour, by each of the coaters operating during the test.

3.3.3 The total amount of water-based coating applied, in pound per hour, during the test.

3.3.4 The solids content in the applied coatings for each coater, in weight percent, and the total amount of solids applied per hour for each coater during each test run.

3.3.5 The total amount of water-based coating solids applies, in pound per hour, during the test.

3.3.6 Type of parts being coated by each coater during the test.

3.3.7 List the other non-spray coating operations running at the time of the test.

3.3.8 If testing at STRU 73, the pressure drop readings in the coating room, the door status, and daily alarm verification. The report must also include records any deviation from the approved minimum pressure drop, and door status at the beginning and end of each test run, and if an alarm is triggered during any test run.

3.3.9 If testing for control efficiency or controlled emission factor, the conditions of operation of control equipment based on required permit operating parameters for the control equipment.

3.4 Test results

3.4.1 The results of the test must be reported as an emissions rate, in pounds per hour, and as a transfer efficiency based on test results, in pound pollutant per pound of solids (as applied).

4. Particulate matter stack testing for all coating operations at STRU 73

4.1 Pollutants and emission rates

4.1.1 Test for total particulate matter, and report as grains per dry standard cubic foot. Testing must include organic and inorganic condensable matter. The test method must be approved as part of the test plan.

4.1.2 Test for PM_{10}, and report results as an emission rate, in pound PM_{10} per hour. This test should be done concurrently with the test for $PM_{2.5}$. It must include organic and inorganic condensable matter. The test method must be approved as part of the test plan.

4.1.3 Test for $PM_{2.5}$, and report results as an emission rate, in pound $PM_{2.5}$ per hour. This test should be done concurrently with the test for PM_{10}. It must include organic and inorganic condensable matter. The test method must be approved as part of the test plan.

4.2 Operating Conditions

4.2.1 If at all possible, all authorized coaters normally in operation must be online at the time of the test.

4.2.2 The required pollution control equipment must be operated under conditions representative of normal operation.

4.2.3 The coating room must be operated during the test in compliance with pressure drop limits, door status, and proper operation of the alarm system.

4.2.4 The Permittee shall target worst-case conditions to be allowed by the permit, including spray coating application rates and coating solids content.

4.3 Operating records

The following operating records shall be recorded during the time of each testing run, including calculations:

4.3.1 Identification of each water-based spray coater in operation during the test.

4.3.2 The amount of water-based coating applied by spraying, in pound per hour, by each of the coaters operating during the test.

4.3.3 The total amount of water-based coating applied by spraying, in pound per hour, during the test.

4.3.4 The solids content in the applied coatings for each water-based spray coater, in weight percent, and the total amount of solids applied per hour for each water spray coater during each test run.

4.3.5 The total amount of water-based coating solids applied, in pound per hour, during the test.

4.3.6 Type of parts being coated by each water-based spray coater during the test.

4.3.7 Identification of each water-based dip/drip coater in operation during the test.

4.3.8 The amount of water-based coating applied by dip/drip, in pound per hour, by each of the coaters operating during the test.

4.3.9 The total amount of water-based coating applied by dip/drip, in pound per hour, during the test.

4.3.10 Identification of each 1,2-(trans-) Dichloroethylene spray coater in operation during the test.

4.3.11 The amount of 1,2-(trans-) Dichloroethylene coating applied by spraying, in pound per hour, by each of the coaters operating during the test.

4.3.12 The total amount of 1,2-(trans-) Dichloroethylene coating applied by spraying, in pound per hour, during the test.

4.3.13 The solids content in the applied 1,2-(trans-) Dichloroethylene coatings for each spray coater, in weight percent, and the total amount of solids applied per hour for each coater during each test run.

4.3.14 The total amount of 1,2-(trans-) Dichloroethylene coating solids applied by spraying during the test, in pound per hour, during the test.

4.3.15 Type of parts being spray coated by each 1,2-(trans-) Dichloroethylene spray coater during the test.

4.3.16 Identification of each 1,2-(trans-) Dichloroethylene dip/drip coater in operation during the test.

4.3.17 The amount of 1,2-(trans-) Dichloroethylene coating applied by dip/drip, in pound per hour, by each of the 1,2-(trans-) Dichloroethylene dip/drip coaters operating during the test.

4.3.18 The total amount of 1,2-(trans-) Dichloroethylene coating applied by dip/drip, in pound per hour, during the test.

4.3.19 Identification of each UV spray coater in operation during the test.

4.3.20 The amount of UV coating applied, in pound per hour, during each test run for each UV coater in operation.
4.3.21 The total amount of UV coating applied, in pound per hour, during each test run.
4.3.22 Type of parts being coated with UV coating during each test run.
4.3.23 Pressure drop readings in the coating room, the door status, and daily alarm verification. The report must also include records any deviation from the approved minimum pressure drop, and door status at the beginning and end of each test run, and if an alarm is triggered during any test run.
4.3.24 (If applicable)$Document the condition of the HEPA or other wall used filters for each spray coater operating during the test, including, but not limited to, alignment, saturation, and tears and holes.

4.4 Test results
4.4.1 The results of the test must be reported as an emissions rate, in pounds per hour.
4.4.2 The Permittee shall calculate PM_{10} and $PM_{2.5}$ emissions of all units operating during the test using the methods described elsewhere in this permit. The total emissions calculated in this manner shall be compared to the measured emissions during the test. If the calculated emissions are equal or higher than the measured emissions, the Permittee will continue to use the emission calculations prescribed in this permit. If measured emissions are higher than calculated emissions, the Permittee must submit a plan to revise emission factors within 30 days of receiving the Notice of Compliance.

5. Particulate matter stack testing for lead processing units

5.1 Pollutants and emission rates
5.1.1 Test for PM_{10} at the inlet (prior to control equipment) and outlet (exiting the stack), and report as an emission rate, in pound PM_{10} per hour, and as an emission factor, in pound PM_{10} per mass throughput. This test should be done concurrently with the test for $PM_{2.5}$. Testing must include organic and inorganic condensable particulate matter. The test method must be approved as part of the test plan.
5.1.2 Test for $PM_{2.5}$ at the inlet (prior to control equipment) and outlet (exiting the stack), and report as an emission rate, in pound $PM_{2.5}$ per hour, and as an emission factor, in pound $PM_{2.5}$ per mass throughput. This test should be done concurrently with the test for PM_{10}. Testing must include organic and inorganic condensable particulate matter. The test method must be approved as part of the test plan.
5.1.3 Test for overall control efficiency of control equipment train, if applicable.

5.2 Operating Conditions
5.2.1 During each test run, all the emission units emitting through the stack being tested must be operated.
5.2.2 If at all possible, all authorized lead processing units and other sources of PM_{10} and $PM_{2.5}$ must be operated at the capacity authorized by the permit.
5.2.3 The pollution control equipment must be operated under conditions representative of normal operation.
5.2.4 The Permittee shall target worst-case conditions to be allowed by the permit, including processing rates for lead processing units and other sources of PM_{10} and $PM_{2.5}$. If this is not attained, the Permittee shall scale up reported emission rates, in pound per hour, to represent the capacity and

maximum process rates allowed by the permit in order to show compliance with the applicable emission limit(s) and verify emission factor(s).

5.3 Operating records.

The following operating records shall be recorded for during the time of each testing run, including calculations:

5.3.1 Total process throughput for each lead processing unit and other sources of PM_{10} and $PM_{2.5}$ being tested during each test run.

5.3.1.1 For emission units physically ducted to specific control equipment and/or stack, report the total process throughput of each lead processing unit and other PM_{10} and $PM_{2.5}$ source operated during the test.

5.3.1.2 For emission units operating in a room in which fugitive emissions vent to building fans/vents, report the total process throughput of each lead processing unit and other PM_{10} and $PM_{2.5}$ source operating in that room.

5.3.2 Documentation showing the electrostatic precipitator (Smog Hog) associated with the lead processing unit was operating at the time of the test.

5.3.3 Pressure drop across the Stage 1 and Stage 2 filters associated with the lead processing unit was operating at the time of the test.

5.3.4 Document the condition of the Stage 1 and Stage 2~~,~~ filters based on required permit operating parameters for the filters.

5.4 Test Results

The test results must be calculated and reported as follows:

5.4.1 Inlet mass rate of PM_{10} and $PM_{2.5}$ prior to the pollution control equipment, in pound PM_{10}/$PM_{2.5}$ per hour.

5.4.2 Outlet mass rate of PM_{10} and $PM_{2.5}$ exiting the stack, in pound PM_{10}/$PM_{2.5}$ per hour.

5.4.3 Overall control efficiency of the control equipment train used during the test.

5.4.4 Uncontrolled emission factor, reported as pound PM_{10}/$PM_{2.5}$ per mass throughput.

5.4.5 Controlled emission factor, reported as pound PM_{10}/$PM_{2.5}$ per mass throughput.

6. Lead stack testing for lead processing units

6.1 Pollutants and emission rates

6.1.1 Test for lead at the inlet (prior to control equipment) and outlet (exiting the stack), and report as an emission rate, pound lead per hour, and as an emission factor, in pound lead per mass throughput. This test should be done concurrently with the test for PM_{10} and $PM_{2.5}$. The test method must be approved as part of the test plan.

6.2 Operating Conditions

6.2.1 During the tests, all emission units emitting through the stack being tested must be in operation.

6.2.2 If at all possible, all authorized lead processing units must be operated at the capacity authorized by the permit.

6.2.3 The pollution control equipment must be operated under conditions representative of normal operation.

6.2.4 The Permittee shall target worst-case conditions to be allowed by the permit, including processing rates for lead-processing units. If this is not attained, the Permittee shall scale up reported emission rates, in pound per hour, to represent the capacity and maximum process rates allowed by the

permit in order to show compliance with the applicable emission limit(s) and verify emission factor(s).

6.3 Operating records. The following operating records shall be recorded during the time of each testing run, including calculations:

6.3.1 Total process throughput for each lead-processing unit being tested during each test run.

6.3.1.1 For emission units physically ducted to specific control equipment and/or stack, report the process throughput of each lead-processing unit operated during the test as well as the total process throughput of all lead-processing unit venting to the tested control equipment train or stack outlet at the time of the test.

6.3.1.2 For emission units operating in a room in which fugitive emissions vent to building fans/vents, report the process throughput of each lead-processing unit operating in that room as well as the total process throughput of all lead-processing unit operating in that room at the time of the test.

6.3.2 Documentation showing the electrostatic precipitator (Smog Hog) associated with the lead processing unit was operating at the time of the test.

6.3.3 Pressure drop across the Stage 1 and Stage 2 filters in each Nederman filter. associated with the lead processing unit was operating at the time of the test.

6.3.4 Document the condition of the Stage 1 and Stage 2~~,~~ filters based on required permit operating parameters for the filters.

6.4 Test results

The test results must be calculated and reported as follows:

6.4.1 Inlet mass rate of lead prior to the pollution control equipment, in pound lead per hour.

6.4.2 Outlet mass rate of lead exiting the stack, in pound lead per hour.

6.4.3 Overall control efficiency of the control equipment train used during the test.

6.4.4 Uncontrolled emission factor, expressed as pound lead per mass throughput.

6.4.5 Controlled emission factor, expressed as pound lead per mass throughput.

Table E1: Performance Test Limits and Recordkeeping Items

Subject Item	Stack Description (Associated Emission Units)	Short-Term Throughput Limits with Target Rates, Process Parameters and Special Considerations for Test Plans.	Throughput Limits and Control Equipment Parameters to monitor during testing	Control Equipment Operating Parameters
STRU 1	Smog Hog #15 Stack (EQUIs 101, 102, 103, 104, and 221)	Process Throughput ≤ 9,920 pounds per hour	Track individual unit process throughput and total process throughput for EQUIs 101, 102, 103, and 104 for each test run. TREA 1 Operation of the Continuous Parameter Monitoring System (CPMS) TREA 60 Pressure Drop	COMG 11: Control Efficiency for PM/ PM_{10}/$PM_{2.5}$ ≥ 97 percent control efficiency Control Efficiency for Lead ≥ 86 percent control efficiency TREA 1: CPMS operating and recording properly TREA 60: Stage 1 Filter Pressure Drop ≥ 0.0001 and ≤ 0.600 kilopascal Stage 2 Filter Pressure Drop ≥ 0.0001 and ≤ 0.800 kilopascal
STRU 15	Smog Hog #1 Stack (EQUIs 121, 122, and 123)	Process Throughput ≤ 1,565 pounds per hour	Track individual unit process throughput and total process throughput for EQUIs 121, 122, and 123 for each test run. TREA 25 Operation of the Continuous Parameter Monitoring System (CPMS) TREA 61 Pressure Drop	COMG 12: Control Efficiency for PM/ PM_{10}/$PM_{2.5}$ ≥ 86.6 percent control efficiency TREA 25: CPMS operating and recording properly TREA 61: Stage 1 Filter Pressure Drop ≥ 0.0001 and ≤ 0.600 kilopascal Stage 2 Filter Pressure Drop ≥ 0.0001 and ≤ 0.800 kilopascal
STRU 16	Smog Hog #2 Stack (EQUIs 124, 125, 126, and 157)	Process Throughput ≤ 1,265 pounds per hour	Track individual unit process throughput and total process throughput for EQUIs 124, 125, 126 and 157 for each test run. TREA 26 Operation of the Continuous Parameter Monitoring System (CPMS) TREAs 62 and 63 Pressure Drop	COMG 12: Control Efficiency for PM/ PM_{10}/$PM_{2.5}$ ≥ 86.6 percent control efficiency TREA 26: CPMS operating and recording properly TREAs 62 and 63: Stage 1 Filter Pressure Drop ≥ 0.0001 and ≤ 0.600 kilopascal Stage 2 Filter Pressure Drop ≥ 0.0001 and ≤ 0.800 kilopascal
STRU 17	Smog Hog #3 Stack (EQUIs 127, 128, and 129)	Process Throughput ≤ 750 pounds per hour	Track individual unit process throughput and total process throughput for EQUIs 127, 128, and 129 for each test run. TREA 27 Operation of the Continuous	COMG 12: Control Efficiency for PM/ PM_{10}/$PM_{2.5}$ ≥ 86.6 percent control efficiency TREA 27: CPMS operating and recording properly TREA 64: Stage 1 Filter Pressure Drop ≥ 0.0001 and ≤ 0.600 kilopascal

Subject Item	Stack Description (Associated Emission Units)	Short-Term Throughput Limits with Target Rates, Process Parameters and Special Considerations for Test Plans.	Throughput Limits and Control Equipment Parameters to monitor during testing	Control Equipment Operating Parameters
			Parameter Monitoring System (CPMS) TREA 64 Pressure Drop	Stage 2 Filter Pressure Drop $\geq$ 0.0001 and $\leq$ 0.800 kilopascal
STRU 74	Smog Hog #5 Stack (EQUIs 130 and 131)	Process Throughput $\leq$ 839.0 pounds per hour	Track individual unit process throughput and total process throughput for EQUIs 130 and 131 for each test run. TREA 78 Operation of the Continuous Parameter Monitoring System (CPMS) TREA 65 Pressure Drop	COMG 12: Control Efficiency for PM/ PM_{10}/$PM_{2.5}$ $\geq$ 86.6 percent control efficiency TREA 78: CPMS operating and recording properly TREA 65: Stage 1 Filter Pressure Drop $\geq$ 0.0001 and $\leq$ 0.600 kilopascal Stage 2 Filter Pressure Drop $\geq$ 0.0001 and $\leq$ 0.800 kilopascal
STRU 20	Smog Hog #6 Stack (EQUIs 132 and 133)	Process Throughput $\leq$ 1015 pounds per hour	Track individual unit process throughput and total process throughput for EQUIs 132 and 133 for each test run. TREA 30 Operation of the Continuous Parameter Monitoring System (CPMS) TREA 66 Pressure Drop	COMG 12: Control Efficiency for PM/ PM_{10}/$PM_{2.5}$ $\geq$ 86.6 percent control efficiency TREA 30: CPMS operating and recording properly TREA 66: Stage 1 Filter Pressure Drop $\geq$ 0.0001 and $\leq$ 0.600 kilopascal Stage 2 Filter Pressure Drop $\geq$ 0.0001 and $\leq$ 0.800 kilopascal
STRU 75	Smog Hog #8 Stack (EQUI 134 and 135)	Process Throughput $\leq$ 1347 pounds per hour	Track process throughput at EQUI 134 for each test run. TREA 79 Operation of the Continuous Parameter Monitoring System (CPMS) TREA 67 Pressure Drop	COMG 12: Control Efficiency for PM/ PM_{10}/$PM_{2.5}$ $\geq$ 86.6 percent control efficiency TREA 67: Stage 1 Filter Pressure Drop $\geq$ 0.0001 and $\leq$ 0.600 kilopascal TREA 79: CPMS operating and recording properly Stage 2 Filter Pressure Drop $\geq$ 0.0001 and $\leq$ 0.800 kilopascal
STRU 23	Smog Hog #9 Stack (EQUI 136)	Process Throughput $\leq$ 894.0 pounds per hour	Track process throughput at EQUI 136 for each test run. TREA 33 Operation of the Continuous Parameter Monitoring System (CPMS) TREA 68 Pressure Drop	COMG 12: Control Efficiency for PM/ PM_{10}/$PM_{2.5}$ $\geq$ 86.6 percent control efficiency TREA 33: CPMS operating and recording properly TREA 68: Stage 1 Filter Pressure Drop $\geq$ 0.0001 and $\leq$ 0.600 kilopascal

Subject Item	Stack Description (Associated Emission Units)	Short-Term Throughput Limits with Target Rates, Process Parameters and Special Considerations for Test Plans.	Throughput Limits and Control Equipment Parameters to monitor during testing	Control Equipment Operating Parameters
				Stage 2 Filter Pressure Drop $\geq$ 0.0001 and $\leq$ 0.800 kilopascal
STRU 24	Smog Hog #10 Stack (EQUIs 137 and 138)	Process Throughput $\leq$ 340.0 pounds per hour	Track individual unit process throughput and total process throughput for EQUIs 137 and 138 for each test run. TREA 34 Operation of the Continuous Parameter Monitoring System (CPMS) TREA 69 Pressure Drop	COMG 12: Control Efficiency for PM/ PM_{10}/$PM_{2.5}$ $\geq$ 86.6 percent control efficiency TREA 34: CPMS operating and recording properly TREA 69: Stage 1 Filter Pressure Drop $\geq$ 0.0001 and $\leq$ 0.600 kilopascal Stage 2 Filter Pressure Drop $\geq$ 0.0001 and $\leq$ 0.800 kilopascal
STRU 25	Smog Hog #11 Stack (EQUIs 139 and 140)	Process Throughput $\leq$ 886.0 pounds per hour	Track individual unit process throughput and total process throughput for EQUIs 139, 140, and 141 for each test run. TREA 35 Operation of the Continuous Parameter Monitoring System (CPMS) TREA 70 Pressure Drop	COMG 12: Control Efficiency for PM/ PM_{10}/$PM_{2.5}$ $\geq$ 86.6 percent control efficiency TREA 35: CPMS operating and recording properly TREA 70: Stage 1 Filter Pressure Drop $\geq$ 0.0001 and $\leq$ 0.600 kilopascal Stage 2 Filter Pressure Drop $\geq$ 0.0001 and $\leq$ 0.800 kilopascal
STRU 26	Smog Hog #12 Stack (EQUIs 141, 142, 143, and 155)	Process Throughput $\leq$ 2221 pounds per hour	Track individual unit process throughput and total process throughput for EQUIs 142, 143, and 155 for each test run. TREA 36 Operation of the Continuous Parameter Monitoring System (CPMS) TREAs 71 and 72 Pressure Drop	COMG 12: Control Efficiency for PM/ PM_{10}/$PM_{2.5}$ $\geq$ 86.6 percent control efficiency TREA 36: CPMS operating and recording properly TREAs 71 and 72: Stage 1 Filter Pressure Drop $\geq$ 0.0001 and $\leq$ 0.600 kilopascal Stage 2 Filter Pressure Drop $\geq$ 0.0001 and $\leq$ 0.800 kilopascal
STRU 30	Smog Hog #16 Stack (EQUIs 146 and 158)	Process Throughput $\leq$ 2433 pounds per hour	Track individual unit process throughput and total process throughput for EQUIs 146 and 158 for each test run. TREA 39 Operation of the Continuous	COMG 12: Control Efficiency for PM/ PM_{10}/$PM_{2.5}$ $\geq$ 86.6 percent control efficiency TREA 39: CPMS operating and recording properly TREA 73: Stage 1 Filter Pressure Drop $\geq$ 0.0001 and $\leq$ 0.600 kilopascal

Subject Item	Stack Description (Associated Emission Units)	Short-Term Throughput Limits with Target Rates, Process Parameters and Special Considerations for Test Plans.	Throughput Limits and Control Equipment Parameters to monitor during testing	Control Equipment Operating Parameters
			Parameter Monitoring System (CPMS) TREA 73 Pressure Drop	Stage 2 Filter Pressure Drop $\geq$ 0.0001 and $\leq$ 0.800 kilopascal
STRU 31	Smog Hog #17 Stack (EQUI 147)	Process Throughput $\leq$ 1200 pounds per hour	Track process throughput at EQUIs 147 for each test run. TREA 40 Operation of the Continuous Parameter Monitoring System (CPMS) TREA 74 Pressure Drop	COMG 12: Control Efficiency for PM/ PM_{10}/$PM_{2.5}$ $\geq$ 86.6 percent control efficiency TREA 40: CPMS operating and recording properly TREA 74: Stage 1 Filter Pressure Drop $\geq$ 0.0001 and $\leq$ 0.600 kilopascal Stage 2 Filter Pressure Drop $\geq$ 0.0001 and $\leq$ 0.800 kilopascal
STRU 32	Smog Hog #18 Stack (EQUIs 149 and 150)	Process Throughput $\leq$ 1210 pounds per hour	Track individual unit process throughput and total process throughput for EQUIs 149 and 150 for each test run. TREA 41 Operation of the Continuous Parameter Monitoring System (CPMS) TREA 75 Pressure Drop	COMG 12: Control Efficiency for PM/ PM_{10}/$PM_{2.5}$ $\geq$ 86.6 percent control efficiency TREA 41: CPMS operating and recording properly TREA 75: Stage 1 Filter Pressure Drop $\geq$ 0.0001 and $\leq$ 0.600 kilopascal Stage 2 Filter Pressure Drop $\geq$ 0.0001 and $\leq$ 0.800 kilopascal
STRU 33	Smog Hog #19 Stack (EQUIs 152 and 156)	Process Throughput $\leq$ 2160 pounds per hour	Track individual unit process throughput and total process throughput for EQUIs 152 and 156 for each test run. TREA 42 Operation of the Continuous Parameter Monitoring System (CPMS) TREA 76 Pressure Drop	COMG 12: Control Efficiency for PM/ PM_{10}/$PM_{2.5}$ $\geq$ 86.6 percent control efficiency TREA 42: CPMS operating and recording properly TREA 76: Stage 1 Filter Pressure Drop $\geq$ 0.0001 and $\leq$ 0.600 kilopascal Stage 2 Filter Pressure Drop $\geq$ 0.0001 and $\leq$ 0.800 kilopascal
STRU 34	Smog Hog #20 Stack (EQUIs 153 and 154)	Process Throughput $\leq$ 2313 pounds per hour	Track individual unit process throughput and total process throughput for EQUIs 153 and 154 for each test run. TREA 43 Operation of the Continuous	COMG 12: Control Efficiency for PM/PM_{10}/$PM_{2.5}$ $\geq$ 86.6 percent control efficiency TREA 43: CPMS operating and recording properly TREA 77: Stage 1 Filter Pressure Drop $\geq$ 0.0001 and $\leq$ 0.600 kilopascal

Subject Item	Stack Description (Associated Emission Units)	Short-Term Throughput Limits with Target Rates, Process Parameters and Special Considerations for Test Plans.	Throughput Limits and Control Equipment Parameters to monitor during testing	Control Equipment Operating Parameters
			Parameter Monitoring System (CPMS) TREA 77 Pressure Drop	Stage 2 Filter Pressure Drop $\geq$ 0.0001 and $\leq$ 0.800 kilopascal
STRU 35	Smog Hog #21 Stack (EQUI 117)	Process Throughput $\leq$ 4.95 pounds per hour	Track individual unit process throughput and total process throughput for EQUI 117 for each test run. No control equipment	None
	Smog Hog #21 Stack (EQUI 160)	Process Throughput $\leq$ 1000 pounds per hour	Track individual unit process throughput and total process throughput for EQUI 160 for each test run. No control equipment	None
STRU 57	Shipping vent 20 (EQUIs 113 and 114)	Process Throughput $\leq$ 545 pounds per hour	Track individual unit process throughput and total process throughput for EQUIs 113 and 114 for each test run.	TREAs 52 and 53: Control Efficiency for $PM_{10}/PM_{2.5} \geq$ 99.98 percent control efficiency Lead $\geq$ 99.0 percent control efficiency
STRU 73	Battery Terminal Post Coater Stack (Battery Terminal Post Coaters)	UV Spray Coating $\leq$ 17.98 pounds per hour VOC/WB Spray Coating $\leq$ 8.97 pounds per hour	Track individual unit and total coating usage at COMG 2, COMG 4, and COMG 8 for each test run. COMG 14: TREAs 55-59: Daily Inspection as required by permit	TREAs 55-59: Control Efficiency for $PM_{10}/PM_{2.5} \geq$ 99.0 percent control efficiency

Commented [A500]: Water Gremlin reserves the opportunity to satisfy performance testing requirements at each coater instead of at STRU73. This was determined to be satisfactory during Coater 6 tests.

Table E2: EPA Performance Test Methods

Subject Item	Description	Pollutants Tested and Test Methods (or other method approved by MPCA in the performance test plan approval)
STRU 1	Smog Hog #15 Stack	PM: Methods 5 and 202 PM_{10}: Methods 201A and 202 $PM_{2.5}$: Methods 201A and 202 Lead: Method 12
STRU 15	Smog Hog #1 Stack	PM: Methods 5 and 202 PM_{10}: Methods 201A and 202 $PM_{2.5}$: Methods 201A and 202 Lead: Method 12

Subject Item	Description	Pollutants Tested and Test Methods (or other method approved by MPCA in the performance test plan approval)
STRU 16	Smog Hog #2 Stack	PM: Methods 5 and 202 PM_{10}: Methods 201A and 202 $PM_{2.5}$: Methods 201A and 202 Lead: Method 12
STRU 17	Smog Hog #3 Stack	PM: Methods 5 and 202 PM_{10}: Methods 201A and 202 $PM_{2.5}$: Methods 201A and 202 Lead: Method 12
STRU 20	Smog Hog #6 Stack	PM: Methods 5 and 202 PM_{10}: Methods 201A and 202 $PM_{2.5}$: Methods 201A and 202 Lead: Method 12
STRU 23	Smog Hog #9 Stack	PM: Methods 5 and 202 PM_{10}: Methods 201A and 202 $PM_{2.5}$: Methods 201A and 202 Lead: Method 12
STRU 24	Smog Hog #10 Stack	PM: Methods 5 and 202 PM_{10}: Methods 201A and 202 $PM_{2.5}$: Methods 201A and 202 Lead: Method 12
STRU 25	Smog Hog #11 Stack	PM: Methods 5 and 202 PM_{10}: Methods 201A and 202 $PM_{2.5}$: Methods 201A and 202 Lead: Method 12
STRU 26	Smog Hog #12 Stack	PM: Methods 5 and 202 PM_{10}: Methods 201A and 202 $PM_{2.5}$: Methods 201A and 202 Lead: Method 12
STRU 30	Smog Hog #16 Stack	PM: Methods 5 and 202 PM_{10}: Methods 201A and 202 $PM_{2.5}$: Methods 201A and 202 Lead: Method 12
STRU 31	Smog Hog #17 Stack	PM: Methods 5 and 202 PM_{10}: Methods 201A and 202 $PM_{2.5}$: Methods 201A and 202 Lead: Method 12
STRU 32	Smog Hog #18 Stack	PM: Methods 5 and 202 PM_{10}: Methods 201A and 202 $PM_{2.5}$: Methods 201A and 202 Lead: Method 12
STRU 33	Smog Hog #19 Stack	PM: Methods 5 and 202 PM_{10}: Methods 201A and 202 $PM_{2.5}$: Methods 201A and 202 Lead: Method 12
STRU 34	Smog Hog #20 Stack	PM: Methods 5 and 202 PM_{10}: Methods 201A and 202 $PM_{2.5}$: Methods 201A and 202 Lead: Method 12
STRU 35	Smog Hog #21 Stack	PM: Methods 5 and 202 PM_{10}: Methods 201A and 202 $PM_{2.5}$: Methods 201A and 202 Lead: Method 12

Subject Item	Description	Pollutants Tested and Test Methods (or other method approved by MPCA in the performance test plan approval)
STRU 57	Shipping Vent # 20	PM: Methods 5 and 202 PM_{10}: Methods 201A and 202 $PM_{2.5}$: Methods 201A and 202 Lead: Method 12
STRU 73 (or Individual Spray Coaters)	Battery Terminal Post Coater Stack	VOC: 25A or 320 1,2-(trans-) Dichloroethylene: 25A or 320 PM: Methods 5 and 202 PM_{10}: Methods 201A and 202 $PM_{2.5}$: Methods 201A and 202
STRU 74	Smog Hog #5 Stack	PM: Methods 5 and 202 PM_{10}: Methods 201A and 202 $PM_{2.5}$: Methods 201A and 202 Lead: Method 12
STRU 75	Smog Hog #8 Stack	PM: Methods 5 and 202 PM_{10}: Methods 201A and 202 $PM_{2.5}$: Methods 201A and 202 Lead: Method 12

Appendix F. VOC ambient air monitoring plan

WENCK File #2606-0009
February 2019

Limited Ambient Air Monitoring Plan

Water Gremlin Company

Prepared for:
Water Gremlin Company

Site Address:
4400 Otter Lake Road
White Bear Township, MN
55110

WENCK
Responsive partner. Exceptional outcomes.

Prepared by:

WENCK
1802 Wooddale Drive
Woodbury, MN 55125
Phone: 651-294-4580
Fax: 651-228-1969

Table of Contents

1.0 Program Overview

Water Gremlin is a manufacturer of fabricated lead metal products from purchased refined lead material. Battery terminal posts are the primary product, and account for majority of production at the facility. Water Gremlin consists of an existing manufacturing facility at 4400 Otter Lake Road in White Bear Township, MN. Water Gremlin manufacturing operations are currently permitted under State Only Air Emission Permit No. 12300341-003 issued by the Minnesota Pollution Control Agency (MPCA). Uncontrolled emissions from the facility are above the major source thresholds for the Part 70 permit program for Volatile Organic Compounds (VOC) and Hazardous Air Pollutants (HAP), therefore the facility has taken limits on VOCs and Trichloroethylene (TCE) to be a synthetic minor source under the Part 70 program and to retain its State Permit status.

This air permit application is for a major air permit amendment. Water Gremlin is currently operating under Air Quality Permit No. 12300341-003, which was issued on September 22, 2006.

Based on conversations with the MPCA, TCE emissions were identified as a potential health risk based on recent air dispersion modeling screened against the Minnesota Department of Health (MDH) Risk Assessment Advice (RAA) of 2 µg/m^3. Water Gremlin is proposing to utilize a new solvent primarily containing trans-1,2-dichloroethylene (TDCE). MDH has developed site-specific RAA for TDCE with a chronic long-term threshold of 70 µg/m^3. TDCE toxicity and potential health risk is considerably less when compared with TCE. Water Gremlin is proposing to conduct TCDE sampling to provide confirmatory data to support the assertion that TDCE emissions from the facility would not pose unacceptable risk to human health. Water Gremlin proposes conducting periodic sampling around the facility to collect data in order to characterize ambient air concentrations of TDCE at the site.

Under this Ambient Air Monitoring Plan (AAMP), Water Gremlin will complete a run of sampling events in early 2019 to evaluate ambient concentrations of TDCE. Other VOCs from US EPA's Compendium Method TO-15 (TO-15) will be analyzed along with TDCE. However, TDCE is the only VOC from the facility anticipated to be potentially observed in ambient air. Other TO-15 VOCs could be anticipated in ambient air from background and other nearby VOC sources as well as mobile sources (motor vehicles) given the proximity of roadways to the proposed monitors. Water Gremlin will use the data gathered under this monitoring to evaluate an approach moving forward.

This AAMP was designed in general accordance with United States Environmental Protection Agency (EPA), *Air/Superfund National Technical Guidance Series, Volume IV – Guidance for Ambient Air Monitoring at Superfund Sites (Revised)*, EPA-451/R-93-007, 1993, and MPCA's Exhibit M.

This AAMP identifies:

- Target compound(s) (TDCE and other TO-15 VOCs)
- Number and locations of the monitoring stations,
- Duration and frequency of monitoring,
- Sampling and analytical methods,
- Associated detection limits (DLs),

WENCK

- Quality Assurance/Quality Control Plan (QA/QC), and
- Data management and reporting system.

In addition to the methodologies, the AAMP provides additional detail regarding Standard Operating Procedures (SOPs) and Quality Control systems.

The goal of the AAMP is to assess air concentrations of TDCE in order to demonstrate the TDCE emissions from the facility do not pose unacceptable risk to the human health and to evaluate potential future compliance demonstration approaches.

2.0 Target Chemical

The target chemical for this AAMP:

- Trans-1,2-dichloroethylene (TDCE)
- Other TO-15 VOCs

The basis for establishing target chemical list is:

- Request from MPCA to evaluate potential TDCE emissions from the site to ensure no unacceptable risk to human health.

3.0 Monitoring Stations

The overall strategy for assessing impacts from potential TDCE emissions at Water Gremlin is to monitor ambient air around the facility taking in account historic wind patterns, preliminary air dispersion modeling results, and location of nearby residents. Monitoring stations are proposed at five locations around the facility. Based on meteorological data from the nearby Crystal Airport from 2012-2016, prevailing winds are from either the northwest or the southeast. A wind rose downloaded from MPCA's website is included in Appendix A. Based on these prevailing wind directions, maximum predicted concentrations would be expected to southeast and northwest. Therefore, a monitoring location is proposed downwind of the emission unit near the southern property line of the adjacent property also owned by Water Gremlin. Monitoring location 1 to the south and southeast (ML1-S) is placed to measure potential facility-impacted (downwind) ambient air as both the closest location to the point source along the southern property line and in the downwind direction of nearby residents. This southern location also correlates with the strong wind pattern from the northwest discussed above. A second monitoring location (ML2-NW) is proposed near the property line in the northwest section of the facility to measure ambient air near residents as well as to capture the other prevailing wind direction from the southeast and is supported by preliminary air dispersion modeling performed by Wenck (see Appendix A figures). A third monitoring location on the east side of the facility (ML3-E) is proposed near the closest resident to the northeast of the facility point source and at the closest location to the point source along the eastern property line. A fourth monitoring location is proposed near the west (ML4-W) facility entrance to characterize ambient air in the direction of the residents in that direction. Lastly, a fifth monitoring location is proposed along the property line directly north (ML5-N) of the facility to characterize ambient air in the direction of the residents in that direction and is located where maximum concentrations are predicted by the preliminary air dispersion modeling. The monitoring locations are illustrated in Figure 1.

For non-criteria pollutants, MPCA's Exhibit M requires siting to meet requirements prescribed in the approved method for the target parameter. However, the approved method (Compendium Method TO-15) does not prescribe siting requirements. Below is an outline of the 40 CFR 58, Appendix E requirements for criteria pollutants that were taken into consideration for the siting of monitors when possible.

- >1 meter (m) vertically or horizontally away from any supporting structures or dusty/dirty areas
- Avoid placement near local or minor sources of target compounds, including other sample machines
- Paved area or year-round vegetative ground cover
- 15 m>h>2 m inlet height above ground level- *Inlets will be 4-5 ft (~1.2-1.5m) from ground level*
- >10 m from tree drip line- *Due to heavy tree coverage, distances for some monitoring locations are less in some cases*
- >10 m from roads with vehicle traffic up to 10,000 vehicles per day
- Unobstructed airflow in all directions; distance from obstacles to the probe, inlet, or monitoring path is at least twice the height that the obstacle protrudes above the probe, inlet, or monitoring path.

Exhibit M forms for each proposed monitoring location are included as Appendix B. A site visit to confirm and approve monitor siting will be conducted to verify EPA siting guidelines are followed as much as possible.

4.0 Sampling and Analytical Methods

The sampling methods selected are based on published, approved US EPA ambient air sampling methods and available sampling technology that is consistent with the objectives of this AAMP.

4.1 SAMPLING IDENTIFICATION

Each collected sample is labeled with an identification number. The sample identification always consists of three components which will be separated by a hyphen. The components that are used to create the unique identification for the sample are as follows:

- Date of the sample collection time period recorded as YYMMDD for 24-hour samples. A sample collected from 10:30am January 29, 2019 through 10:30 am on January 30, 2019 is recorded as 190129.
- Station number where the sample location is collected. A sample collected at the Monitoring Location 1-South is recorded as ML1S.
- US EPA TO-15 method is recorded as TO15.

After the elements of the collected sample have been identified, the sampling technician assembles the sample identification components described above to create the Sample ID for each respective sample. An example of the Sample ID is as follows:

- A sample collected on February 8, 2019 at Monitoring Location 1-South by TO-15 would be identified as Sample ID 190208-ML1S-TO15.

4.2 SAMPLING FREQUENCY

Water Gremlin proposes to sample ambient air for a 24-hour period coinciding with EPA's 3-day schedule with the exception that the sampling will commence mid-morning to mid-morning as opposed to midnight to midnight sampling. This is to accommodate the need for staff to be on-site to initiate sampling and in consideration of safety. Additionally, the proposed locations may not have power readily available to accommodate installing automatic samplers. In order to accommodate travel time between sampling locations, samples will be collected on a slightly staggered schedule.

Samples will be collected over a 24-hour time period and will capture ambient air during manufacturing, including start-up. The sampling will also capture the various daily operating day shifts throughout the day which are as follows:

- 1st – 6:15 – 2:45 pm
- 2nd – 2:15 – 10:45 pm
- 3rd – 10:15 – 6:45 am

The 2019 EPA sampling schedule is included in Appendix C.

4.3 SAMPLING AND ANALYTICAL METHODS

US EPA's Compendium Method TO-15 is the sampling and analytical method to be utilized for this AAMP. A Canister Sampling SOP is included in Appendix D. Laboratory SOPs from Pace Analytical are included in Appendix E.

Chemical Group	Sampling & Analytical Method	Target Detection Limit[1]
TDCE	US EPA's Compendium Method TO-15	MDL 0.29 to RL 0.81 µg/m³

(1) Method Detection Limits (MDLs) and Reporting Limits (RLs) may vary based on factors such as dilution. The detection limit will be whatever is technically capable in accordance with the US EPA approved analytical methods provided by the laboratory. The "examples" shown in the table above represent the general order of magnitude of the detection limits.

4.3.1 TDCE

Water Gremlin will collect TDCE samples in electropolished 6 Liter stainless steel Summa canisters with 24-hour flow controller. The instrumentation and sampling procedures are described in US EPA's Compendium Method TO-15. The TO-15 VOC analysis is performed using Gas Chromatography (GC) with detection limits ranging from 1 to 200 micrograms per cubic meter (µg/m³). Method TO-15 includes specifications for 1) preparation, cleaning, and certification of sampling equipment, 2) sample preservation, transport, and storage, and 3) sample holding times prior to analysis.

Each canister will be individually certified as clean according the Pace Analytical Lab SOP included in Appendix E, so field/travel blanks are not anticipated to be necessary for this sampling.

4.3.2 Other TO-15 VOCs

Other TO-15 VOCs will be analyzed in collected samples as described above. TDCE is the only VOC from the facility anticipated to be potentially observed in ambient air. Other VOCs could be anticipated in ambient air from background and other nearby VOC sources as well as mobile sources (motor vehicles) given the proximity of roadways to the proposed monitors.

The reporting limits and detection limits for the entire TO-15 analyte panel for Pace Analytical Lab is also included in Appendix E.

4.3.3 Meteorological Data

Meteorological data including hourly wind speed, wind direction, and precipitation will be collected from nearby Crystal Airport. Wind rose plots will be created from the meteorological data for each of the 24-hour sampling events.

4.4 DEVIATIONS

Specific deviations noted for documentation are listed below:

- Sample times will be staggered and driven by business hours to accommodate the need for on-site sampling initiation. The sample times are intended to capture a full, continuous day inside the total twenty-four-hour sampling period but vary

from the traditional EPA midnight to midnight (0000 to 0000) schedule. Because this is a site-specific plan, comparison to EPA sampling is not required.

5.0 Data Management

The AAMP goal is to provide accurate, defensible data to determine if TDCE emissions from Water Gremlin result in unacceptable risks to human health. The data must meet the Quality Assurance Project Plan (QAPP) criteria for accuracy, precision, completeness, and representativeness. The QAPP for this AAMP is included as Appendix F.

5.1 DOCUMENTATION AND RECORDING

The following information is collected and maintained to document the sampling and analytical results:

- Meteorological conditions from nearby Crystal Airport will be reviewed
- Sampling variables (times, flow rates, volumes collected, etc.);
- Upset conditions (releases at the facility, unusual meteorological events, fires, or any other event that may cause an impact to the ambient air);
- Calibration or maintenance procedures;
- Copies of chain-of-custody forms; and
- Analytical data from the laboratories.

5.2 DATA REDUCTION

The laboratory will provide Water Gremlin and MPCA with analytical results. The results will be compiled into a spreadsheet this is unlocked and editable and provided to MPCA. Analytical results will be submitted to MPCA with 48 hours of lab receipt until six consecutive, valid sampling events have occurred. After six consecutive, valid sampling events, analytical results will be submitted to MPCA with 14 calendar days of the sampling event.

5.3 DATA VALIDATION

Data validation is the systematic review of measurement data for outlier identification and error detection. For the purpose of this AAMP, Level I-III validation levels are defined as follows:

Level I validation includes reviewing chain-of-custody forms to detect problems such as canister leakage that may have contributed to nonstandard sampling intervals, insufficient sampling volume, or other problems. Level I validation is performed by Water Gremlin and their consultants who assist with management and implementation of the AAMP.

Level II validation verifies compound identities and if analytical systems are operating within acceptance criteria and identifies anomalies. Level II validation is performed by the laboratories.

Level III validation screens data for outliers, evaluates results inconsistent with other collected data and prevailing wind directions, and evaluates results considering special conditions (such as a field fire or an agricultural related dust plume during the sampling event). Data screening can include:

- Routine checks and procedures,
- Check for internal data consistency, and
- Check for consistency with data collected at the same time, under similar conditions.

Level III validation is not anticipated for this AAMP based on the temporary nature of the sampling.

5.4 DATA REPORTING

MPCA will receive data directly from the laboratory. Additionally, Water Gremlin will evaluate the collected data against the SOPs, standards, and QAPP. Data to be documented and reported include:

- 24-hour average concentration,
- Meteorological data from nearby Crystal Airport,
- Detected concentrations by station and monitoring period,
- Number of collected samples,
- Detection limits
- Exceedances of QAPP criteria, if applicable, and
- Quality Control sample results including method blanks, and lab control spikes/duplicates.

The reports may also provide a narrative discussion and summary of the data set and data quality. Surrogate recoveries are not required by TO-15 and if acceptable, will not be reported. If required, surrogate recoveries can be reported once the laboratory gets a system in place. Calibration verifications and chromatography are raw data that requires a full level 4 data package. Chromatography (and, if acceptable, calibration verifications) will be provided by laboratory upon request from MPCA.

6.0 References

United States Environmental Protection Agency (US EPA), May 1993. Air/Superfund National Technical Guidance Series, Volume IV – Guidance for Ambient Air Monitoring at Superfund Sites (Revised). EPA-451/R-93-007. Office of Air Quality Planning and Standards Research, Research Triangle Park, NC.

U.S. Environmental Protection Agency (US EPA), August 1998. *Quality Assurance Handbook for Air Pollution Measurement Systems.* Volume II: Part 1. Ambient Air Quality Monitoring Program Quality System Development.

U.S. Environmental Protection Agency (US EPA), January 1999. *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air: Method TO-15,* Second Edition. EPA/625/R-96/010b. Research Triangle Park, NC.

Pace Analytical Services, LLC. December 2018. Cleaning, Certification, Leak Checking and Preparation for Shipment of SUMMA Passivated Canisters (ENV-SOP-MIN4-0002)

Pace Analytical Services, LLC. October 2018. Analysis of Whole Air Sample for Volatile Organic Compound by GC/MS EPA TO15/TO14 (ENV-SOP-MIN4-0005)

Figures

1. Site Map – Monitoring Locations


Aerial imagery is from Google Earth.
Water Gremlin Company –White Bear Township, MN
Site Map - Monitoring Locations
WENCK
FIGURE 1
Feb 2019

Appendix A

Modeling Figures/Wind Rose Plot

Figure A-1: Preliminary 1-hour Unitized Modeling Results

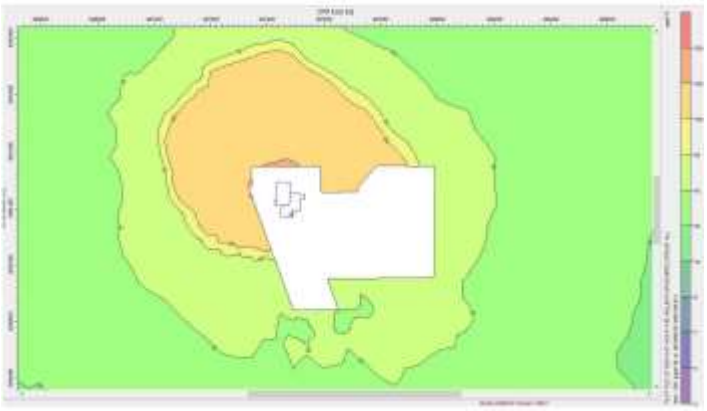
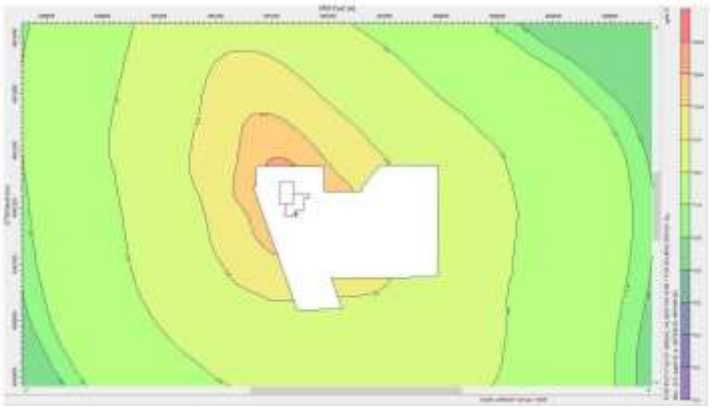
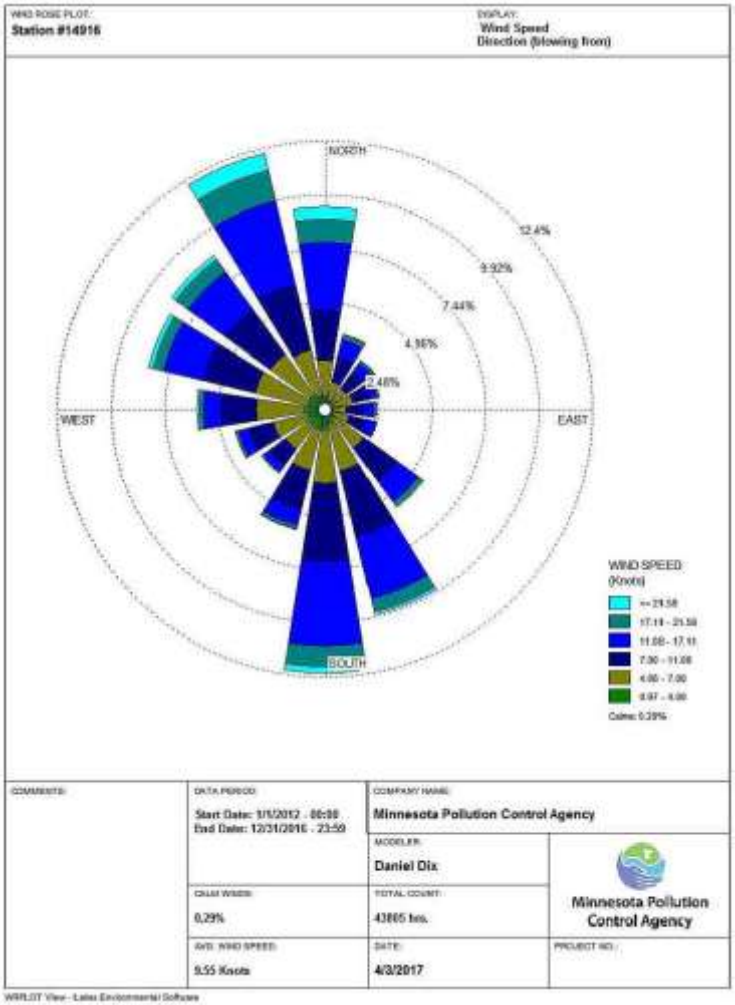


Figure A-2: Preliminary 24-hour Unitized Modeling Results

Figure A-3: Preliminary Monthly Unitized Modeling Results

Figure A-4: Preliminary Annual Unitized Modeling Results




WIND ROSE PLOT:
Station #14916
DISPLAY:
Wind Speed
Direction (blowing from)
NORTH
EAST
SOUTH
WEST
12.4%
9.92%
7.44%
4.96%
2.48%
WIND SPEED
(Knots)
Calms: 0.29%
COMMENTS:
DATA PERIOD:
Start Date: 1/1/2012 - 00:00
End Date: 12/31/2016 - 23:59
COMPANY NAME:
Minnesota Pollution Control Agency
MODELER:
Daniel Dix
CALM WINDS:
0.29%
TOTAL COUNT:
43865 hrs.
AVG. WIND SPEED:
9.55 Knots
DATE:
4/3/2017
PROJECT NO.:
Minnesota Pollution Control Agency
WRPLOT View - Lakes Environmental Software

Appendix B

Exhibit M Forms

Revision 6/20/2017

Ambient Air Monitoring Site Information Form (page 1 of 2)

Site ID #: ML1-S New X Change ____

Date established: February 2019

Date terminated: To be determined

Supporting agency: Wenck (in collaboration with Pace Analytical Services, Inc.)

Street address: 1802 Wooddale Drive

City: Woodbury State: MN Zip code: 55125

Site name: Water Gremlin

Site address: 4400 Otter Lake Road

City: White Bear Twsp. State: MN Zip code: 55110 County: Ramsey

Geographical coordinates: fill in either UTM coordinates OR Latitude / Longitude

UTM Coordinates:

Zone: 15 North: 4990974.95 East: 497600.97

Longitude and Latitude:

Latitude: _____ Longitude: _____

Geographical coordinate measurement information:

Method of determination: Google Earth

Estimate of accuracy: Approximately +/- 2m Datum: NAD 83

Elevation (mean sea level)

Elevation: 279.98 Estimate of accuracy: Approximately +/- 2m

Method of determination: Google Earth

Land Use (check one)

Residential X Commercial ____ Industrial ____ Agricultural ____

Forest ____ Desert ____ Mobile ____ Blighted areas ____

Location Setting (check one)

Rural ____ Suburban X Urban & City center ____

Page 9 of 12

Revision 6/20/2017

Ambient Air Monitoring Site Information Form (page 2 of 2)

Meteorological Data

Is meteorological data collected for this site? Yes X No __

If yes, is it collected at this site or at another site? This site ___ Another site X

If met data is collected at a different site, fill in the following:

Meteorological site ID or name: Crystal Airport

Distance from site to meteorological site: 25 km

Direction from site to meteorological site: West

Street Information

	Name	Type	Direction to Site	Traffic Count*	Year
1.	Otter Lake Road	4	West	8,000	2014
2.	Whitaker Street	5	South	No data	
3.					
4.					

*Annual Daily Average

Type: 1) Arterial 2) Expressway 3) Freeway 4) Major Street 5) Thru Street 6) Local Street

Site Description:

Comments:

Revision 6/20/2017

Ambient Air Monitoring Monitor Information Form (page 1 of 2)

New X Change ___

For office use: AQS monitor Id:

Site ID: ML1-S Date sampling began : February 2019

Parameter: TDCE Sampling ended : To be determined

Collection laboratory: Pace Analytical Services, Inc.
Site address: 1700 Elm Street SE
City: Minneapolis State: MN Zip code: 55414

Analysis laboratory: Pace Analytical Services, Inc.
Site address: 1700 Elm Street SE
City: Minneapolis State: MN Zip code: 55414

Analyzer manufacturer: N/A
Analyzer model: N/A
Collection and analysis method code: SUMMA Passivated Canister TDCE TO15
Serial #: MPCA Asset #:

Project Classification (check one):

___Population-oriented	X Source Oriented	___Background Surveillance
___Complain Invest	___Special Studies	___Episode Monitoring
___Exposure Studies	___Duplicate Sampling	___Continuous Monitoring

Dominant Source (check one):

X Point ___Area ___Mobile

Measurement Scale (check one):

___Micro Scale ___Middle Scale X Neighborhood ___Urban Scale ___Regional

Monitoring Objective (check one):

___Highest Concentration ___Population Exposure ___General Background X Source Impact

Monitor Type (check one):

___Unknown ___SLAMS X Other ___Industrial ___Index

Revision 6/20/2017

Ambient Air Monitoring Monitor Information Form (page 2 of 2)

Probe Location (check one):

_____Roof Top _____Side of Building X Support at Ground Level
_____Pole _____Other _____Top of Tower (met equipment)

Probe height (m): ~1.2-1.5m **Unrestricted Air Flow?** (circle one) Y or (N)

24-hour samplers only:

	Req. Sampling Frequency	Date effective
	every third day	02 / 08 / 2019
		___/___/____
		___/___/____

For "stratified random", "random", or "seasonal" sampling frequency fill in the number of samples per month:

Jan.___ Feb. X Mar. X Apr. X May.___ Jun.____
Jul.___ Aug.___ Sep.___ Oct.___ Nov.___ Dec.____

Obstructions:

#	Type	Direction	Distance	Height
1	2	SE	6m	varies
2				
3				

Types: 1.building, 2.trees/brush, 3.ridges, 4.cliffs, 5.structure other than building.
Distance and height in meters. Direction in 8-point compass.

Comments:

Revision 6/20/2017

Ambient Air Monitoring Site Information Form (page 1 of 2)

Site ID #: ML2-NW New X Change ____

Date established: February 2019

Date terminated: To be determined

Supporting agency: Wenck (in collaboration with Pace Analytical Services, Inc.)

Street address: 1802 Wooddale Drive

City: Woodbury State: MN Zip code: 55125

Site name: Water Gremlin

Site address: 4400 Otter Lake Road

City: White Bear Twsp. State: MN Zip code: 55110 County: Ramsey

Geographical coordinates: fill in either UTM coordinates OR Latitude / Longitude

UTM Coordinates:

Zone: 15 North: 4991327.12 East: 497359.70

Longitude and Latitude:

Latitude: _____ Longitude: _____

Geographical coordinate measurement information:

Method of determination: Google Earth

Estimate of accuracy: Approximately +/- 2m Datum: NAD 83

Elevation (mean sea level)

Elevation: 283.47 Estimate of accuracy: Approximately +/- 2m

Method of determination: Google Earth

Land Use (check one)

Residential X Commercial ____ Industrial ____ Agricultural ____

Forest ____ Desert ____ Mobile ____ Blighted areas ____

Location Setting (check one)

Rural ____ Suburban X Urban & City center ____

Page 9 of 12

Revision 6/20/2017

Ambient Air Monitoring Site Information Form (page 2 of 2)

Meteorological Data

Is meteorological data collected for this site? Yes X No ___

If yes, is it collected at this site or at another site? This site ___ Another site X

If met data is collected at a different site, fill in the following:

Meteorological site ID or name: Crystal Airport

Distance from site to meteorological site: 25 km

Direction from site to meteorological site: West

Street Information

	Name	Type	Direction to Site	Traffic Count*	Year
1.	Otter Lake Road	4	West	8,000	2014
2.	Whitaker Street	5	South	No data	
3.					
4.					

*Annual Daily Average

Type: 1) Arterial 2) Expressway 3) Freeway 4) Major Street 5) Thru Street 6) Local Street

Site Description:

Comments:

Revision 6/20/2017

Ambient Air Monitoring Monitor Information Form (page 1 of 2)

New X Change ___

For office use: AQS monitor Id:

Site ID: ML2-NW Date sampling began : February 2019

Parameter: TDCE Sampling ended : To be determined

Collection laboratory: Pace Analytical Services, Inc.
Site address: 1700 Elm Street SE
City: Minneapolis State: MN Zip code: 55414

Analysis laboratory: Pace Analytical Services, Inc.
Site address: 1700 Elm Street SE
City: Minneapolis State: MN Zip code: 55414

Analyzer manufacturer: N/A
Analyzer model: N/A
Collection and analysis method code: SUMMA Passivated Canister TDCE TO15
Serial #: MPCA Asset #:

Project Classification (check one):

___Population-oriented	X Source Oriented	___Background Surveillance
___Complain Invest	___Special Studies	___Episode Monitoring
___Exposure Studies	___Duplicate Sampling	___Continuous Monitoring

Dominant Source (check one):

X Point ___Area ___Mobile

Measurement Scale (check one):

___Micro Scale ___Middle Scale X Neighborhood ___Urban Scale ___Regional

Monitoring Objective (check one):

___Highest Concentration ___Population Exposure ___General Background X Source Impact

Monitor Type (check one):

___Unknown ___SLAMS X Other ___Industrial ___Index

Page 11 of 12

Revision 6/20/2017

Ambient Air Monitoring Monitor Information Form (page 2 of 2)

Probe Location (check one):

_____Roof Top _____Side of Building X Support at Ground Level
_____Pole _____Other _____Top of Tower (met equipment)

Probe height (m): ~1.2-1.5m **Unrestricted Air Flow?** (circle one) Y or (N)

24-hour samplers only:

	Req. Sampling Frequency	Date effective
	every third day	02 / 08 / 2019
		___/___/____
		___/___/____

For "stratified random", "random", or "seasonal" sampling frequency fill in the number of samples per month:

Jan.___ Feb. X Mar. X Apr. X May.___ Jun.____
Jul.___ Aug.___ Sep.___ Oct.___ Nov.___ Dec.____

Obstructions:

#	Type	Direction	Distance	Height
1	2	E&W	8m	varies
2				
3				

Types: 1.building, 2.trees/brush, 3.ridges, 4.cliffs, 5.structure other than building.
Distance and height in meters. Direction in 8-point compass.

Comments:

Revision 6/20/2017

Ambient Air Monitoring Site Information Form (page 1 of 2)

Site ID #: ML3-E New X Change ____

Date established: February 2019

Date terminated: To be determined

Supporting agency: Wenck (in collaboration with Pace Analytical Services, Inc.)

Street address: 1802 Wooddale Drive

City: Woodbury State: MN Zip code: 55125

Site name: Water Gremlin

Site address: 4400 Otter Lake Road

City: White Bear Twsp. State: MN Zip code: 55110 County: Ramsey

Geographical coordinates: fill in either UTM coordinates OR Latitude / Longitude

UTM Coordinates:

Zone: 15 North: 4991255.00 East: 497573.12

Longitude and Latitude:

Latitude: _____ Longitude: _____

Geographical coordinate measurement information:

Method of determination: Google Earth

Estimate of accuracy: Approximately +/- 2m Datum: NAD 83

Elevation (mean sea level)

Elevation: 281.37 Estimate of accuracy: Approximately +/- 2m

Method of determination: Google Earth

Land Use (check one)

Residential X Commercial ____ Industrial ____ Agricultural ____

Forest ____ Desert ____ Mobile ____ Blighted areas ____

Location Setting (check one)

Rural ____ Suburban X Urban & City center ____

Revision 6/20/2017

Ambient Air Monitoring Site Information Form (page 2 of 2)

Meteorological Data

Is meteorological data collected for this site? Yes X No ___

If yes, is it collected at this site or at another site? This site ___ Another site X

If met data is collected at a different site, fill in the following:

Meteorological site ID or name: Crystal Airport

Distance from site to meteorological site: 25 km

Direction from site to meteorological site: West

Street Information

	Name	Type	Direction to Site	Traffic Count*	Year
1.	Otter Lake Road	4	West	8,000	2014
2.	Whitaker Street	5	South	No data	
3.					
4.					

*Annual Daily Average

Type: 1) Arterial 2) Expressway 3) Freeway 4) Major Street 5) Thru Street 6) Local Street

Site Description:

Comments:

Revision 6/20/2017

Ambient Air Monitoring Monitor Information Form (page 1 of 2)

New X Change ___

For office use: AQS monitor Id:

Site ID: ML3-E Date sampling began : February 2019

Parameter: TDCE Sampling ended : To be determined

Collection laboratory: Pace Analytical Services, Inc.
Site address: 1700 Elm Street SE
City: Minneapolis State: MN Zip code: 55414

Analysis laboratory: Pace Analytical Services, Inc.
Site address: 1700 Elm Street SE
City: Minneapolis State: MN Zip code: 55414

Analyzer manufacturer: N/A
Analyzer model: N/A
Collection and analysis method code: SUMMA Passivated Canister TDCE TO15
Serial #: MPCA Asset #:

Project Classification (check one):

___Population-oriented	X Source Oriented	___Background Surveillance
___Complain Invest	___Special Studies	___Episode Monitoring
___Exposure Studies	___Duplicate Sampling	___Continuous Monitoring

Dominant Source (check one):

X Point ___Area ___Mobile

Measurement Scale (check one):

___Micro Scale ___Middle Scale X Neighborhood ___Urban Scale ___Regional

Monitoring Objective (check one):

___Highest Concentration ___Population Exposure ___General Background X Source Impact

Monitor Type (check one):

___Unknown ___SLAMS X Other ___Industrial ___Index

Revision 6/20/2017

Ambient Air Monitoring Monitor Information Form (page 2 of 2)

Probe Location (check one):

_____Roof Top _____Side of Building X Support at Ground Level
_____Pole _____Other _____Top of Tower (met equipment)

Probe height (m): ~1.2-1.5m **Unrestricted Air Flow?** (circle one) Y or (N)

24-hour samplers only:

Req. Sampling Frequency	Date effective
every third day	02 / 08 / 2019
	/ /
	/ /

For "stratified random", "random", or "seasonal" sampling frequency fill in the number of samples per month:

Jan.___ Feb. X Mar. X Apr. X May.___ Jun.___
Jul.___ Aug.___ Sep.___ Oct.___ Nov.___ Dec.___

Obstructions:

#	Type	Direction	Distance	Height
1	2	S & E	10m	varies
2				
3				

Types: 1.building, 2.trees/brush, 3.ridges, 4.cliffs, 5.structure other than building.
Distance and height in meters. Direction in 8-point compass.

Comments:

Revision 6/20/2017

Ambient Air Monitoring Site Information Form (page 1 of 2)

Site ID #: ML4-W New X Change ____

Date established: February 2019

Date terminated: To be determined

Supporting agency: Wenck (in collaboration with Pace Analytical Services, Inc.)

Street address: 1802 Wooddale Drive

City: Woodbury State: MN Zip code: 55125

Site name: Water Gremlin

Site address: 4400 Otter Lake Road

City: White Bear Twsp. State: MN Zip code: 55110 County: Ramsey

Geographical coordinates: fill in either UTM coordinates OR Latitude / Longitude

UTM Coordinates:

Zone: 15 North: 4991195.00 East: 497373.00

Longitude and Latitude:

Latitude: _____ Longitude: _____

Geographical coordinate measurement information:

Method of determination: Google Earth

Estimate of accuracy: Approximately +/- 2m Datum: NAD 83

Elevation (mean sea level)

Elevation: 281.25 Estimate of accuracy: Approximately +/- 2m

Method of determination: Google Earth

Land Use (check one)

Residential X Commercial ____ Industrial ____ Agricultural ____

Forest ____ Desert ____ Mobile ____ Blighted areas ____

Location Setting (check one)

Rural ____ Suburban X Urban & City center ____

Page 9 of 12

Revision 6/20/2017

Ambient Air Monitoring Site Information Form (page 2 of 2)

Meteorological Data

Is meteorological data collected for this site? Yes X No __

If yes, is it collected at this site or at another site? This site ___ Another site X

If met data is collected at a different site, fill in the following:

Meteorological site ID or name: Crystal Airport

Distance from site to meteorological site: 25 km

Direction from site to meteorological site: West

Street Information

	Name	Type	Direction to Site	Traffic Count*	Year
1.	Otter Lake Road	4	West	8,000	2014
2.	Whitaker Street	5	South	No data	
3.					
4.					

*Annual Daily Average

Type: 1) Arterial 2) Expressway 3) Freeway 4) Major Street 5) Thru Street 6) Local Street

Site Description:

Comments:

Revision 6/20/2017

Ambient Air Monitoring Monitor Information Form (page 1 of 2)

New X Change ___

For office use: AQS monitor Id:

Site ID: ML4-W Date sampling began : February 2019

Parameter: TDCE Sampling ended : To be determined

Collection laboratory: Pace Analytical Services, Inc.
Site address: 1700 Elm Street SE
City: Minneapolis State: MN Zip code: 55414

Analysis laboratory: Pace Analytical Services, Inc.
Site address: 1700 Elm Street SE
City: Minneapolis State: MN Zip code: 55414

Analyzer manufacturer: N/A
Analyzer model: N/A
Collection and analysis method code: SUMMA Passivated Canister TDCE TO15
Serial #: MPCA Asset #:

Project Classification (check one):

___Population-oriented	X Source Oriented	___Background Surveillance
___Complain Invest	___Special Studies	___Episode Monitoring
___Exposure Studies	___Duplicate Sampling	___Continuous Monitoring

Dominant Source (check one):

X Point ___Area ___Mobile

Measurement Scale (check one):

___Micro Scale ___Middle Scale X Neighborhood ___Urban Scale ___Regional

Monitoring Objective (check one):

___Highest Concentration ___Population Exposure ___General Background X Source Impact

Monitor Type (check one):

___Unknown ___SLAMS X Other ___Industrial ___Index

Revision 6/20/2017

Ambient Air Monitoring Monitor Information Form (page 2 of 2)

Probe Location (check one):

_____Roof Top _____Side of Building X Support at Ground Level
_____Pole _____Other _____Top of Tower (met equipment)

Probe height (m): ~1.2-1.5m **Unrestricted Air Flow?** (circle one) Y or (N)

24-hour samplers only:

Req. Sampling Frequency	Date effective
every third day	02 / 08 / 2019
	/ /
	/ /

For "stratified random", "random", or "seasonal" sampling frequency fill in the number of samples per month:

Jan.___ Feb. X Mar. X Apr. X May.___ Jun.___
Jul.___ Aug.___ Sep.___ Oct.___ Nov.___ Dec.___

Obstructions:

#	Type	Direction	Distance	Height
1				
2				
3				

Types: 1.building, 2.trees/brush, 3.ridges, 4.cliffs, 5..structure other than building
Distance and height in meters. Direction in 8-point compass.

Comments:

Revision 6/20/2017

Ambient Air Monitoring Site Information Form (page 1 of 2)

Site ID #: ML5-N New X Change ____

Date established: February 2019

Date terminated: To be determined

Supporting agency: Wenck (in collaboration with Pace Analytical Services, Inc.)

Street address: 1802 Wooddale Drive

City: Woodbury State: MN Zip code: 55125

Site name: Water Gremlin

Site address: 4400 Otter Lake Road

City: White Bear Twsp. State: MN Zip code: 55110 County: Ramsey

Geographical coordinates: fill in either UTM coordinates OR Latitude / Longitude

UTM Coordinates:

Zone: 15 North: 4991339.97 East: 497449.97

Longitude and Latitude:

Latitude: _____ Longitude: _____

Geographical coordinate measurement information:

Method of determination: Google Earth

Estimate of accuracy: Approximately +/- 2m Datum: NAD 83

Elevation (mean sea level)

Elevation: 283.22 Estimate of accuracy: Approximately +/- 2m

Method of determination: Google Earth

Land Use (check one)

Residential X Commercial ____ Industrial ____ Agricultural ____

Forest ____ Desert ____ Mobile ____ Blighted areas ____

Location Setting (check one)

Rural ____ Suburban X Urban & City center ____

Page 9 of 12

Revision 6/20/2017

Ambient Air Monitoring Site Information Form (page 2 of 2)

Meteorological Data

Is meteorological data collected for this site? Yes X No __

If yes, is it collected at this site or at another site? This site ___ Another site X

If met data is collected at a different site, fill in the following:

Meteorological site ID or name: Crystal Airport

Distance from site to meteorological site: 25 km

Direction from site to meteorological site: West

Street Information

	Name	Type	Direction to Site	Traffic Count*	Year
1.	Otter Lake Road	4	West	8,000	2014
2.	Whitaker Street	5	South	No data	
3.					
4.					

*Annual Daily Average

Type: 1) Arterial 2) Expressway 3) Freeway 4) Major Street 5) Thru Street 6) Local Street

Site Description:

Comments:

Revision 6/20/2017

Ambient Air Monitoring Monitor Information Form (page 1 of 2)

New X Change ___

For office use: AQS monitor Id:

Site ID: ML5-N Date sampling began : February 2019

Parameter: TDCE Sampling ended : To be determined

Collection laboratory: Pace Analytical Services, Inc.
Site address: 1700 Elm Street SE
City: Minneapolis State: MN Zip code: 55414

Analysis laboratory: Pace Analytical Services, Inc.
Site address: 1700 Elm Street SE
City: Minneapolis State: MN Zip code: 55414

Analyzer manufacturer: N/A
Analyzer model: N/A
Collection and analysis method code: SUMMA Passivated Canister TDCE TO15
Serial #: MPCA Asset #:

Project Classification (check one):

___Population-oriented	X Source Oriented	___Background Surveillance
___Complain Invest	___Special Studies	___Episode Monitoring
___Exposure Studies	___Duplicate Sampling	___Continuous Monitoring

Dominant Source (check one):

X Point ___Area ___Mobile

Measurement Scale (check one):

___Micro Scale ___Middle Scale X Neighborhood ___Urban Scale ___Regional

Monitoring Objective (check one):

___Highest Concentration ___Population Exposure ___General Background X Source Impact

Monitor Type (check one):

___Unknown ___SLAMS X Other ___Industrial ___Index

Revision 6/20/2017

Ambient Air Monitoring Monitor Information Form (page 2 of 2)

Probe Location (check one):

_____Roof Top _____Side of Building X Support at Ground Level
_____Pole _____Other _____Top of Tower (met equipment)

Probe height (m): ~1.2-1.5m **Unrestricted Air Flow?** (circle one) Y or (N)

24-hour samplers only:

	Req. Sampling Frequency	Date effective
	every third day	02 / 08 / 2019
		___/___/____
		___/___/____

For "stratified random", "random", or "seasonal" sampling frequency fill in the number of samples per month:

Jan.___ Feb. X Mar. X Apr. X May.___ Jun.____
Jul.___ Aug.___ Sep.___ Oct.___ Nov.___ Dec.____

Obstructions:

#	Type	Direction	Distance	Height
1	2	All	<5m	varies
2				
3				

Types: 1.building, 2.trees/brush, 3.ridges, 4.cliffs, 5.structure other than building.
Distance and height in meters. Direction in 8-point compass.

Comments:

Appendix C

Sampling Schedule


EPA Sampling Schedule
2019
Important Dates
Notes
3-Day schedule is shown in orange, green, and purple
6-Day schedule is shown in green and purple
12-Day schedule is shown in purple
January
February
March
April
May
June
July
August
September
October
November
December

Appendix D

Canister Sampling Standard Operating Procedure

Canister Sampling Standard Operating Procedure

The following sampling procedures and worksheet are developed from U.S. EPA's Compendium Method TO-15.

PROCEDURE

Subatmospheric Pressure Sampling

1. Prior to sample collection, the appropriate information is completed on the canister sampling field test data sheet (FTDS). A sample FTDS from the TO-15 method is attached along with a FTDS prepared by Pace Analytical Lab for this project. If acceptable, the Pace Analytical FTDS will be utilized for this project.
2. In preparation for sample collection, the canister is evacuated to < 0.2 millimeters of mercury (mmHg) (<200 mTorr). When the canister is opened to the atmosphere containing the VOCs to be sampled, the differential pressure causes the sample to flow into the canister. This technique will be used to collect time-weighted-average (TWA) samples (duration of 24 hours) taken through a flow-restrictive inlet (mass flow controller). The pressure differential causes the sample to flow into the canister.
3. With a mass flow controller, the subatmospheric sampling system can maintain a constant flow rate from full vacuum to within about 7 kPa (1.0 psi) or less below ambient pressure.
4. Prior to field use, each sampling system must pass a humid nitrogen. All plumbing should be checked carefully for leaks. The canisters must also pass a humid nitrogen certification before use.
5. The sample canister should be cleaned and tested according to the Pace Analytical Lab SOP included in Appendix E. Each individual canister flow controller is calibrated (3.8 ml/min for 24 hr controllers) and logged following these procedures.
6. The canister is placed at the desired location and the sample valve is opened to indicate the sampling. Initial Pressure/vacuum in the canister is recorded on the canister FTDS as indicated by the sampler vacuum/pressure gauge.
7. At the end of the sampling period, the sample valve is closed, and the final vacuum/pressure is recorded on the FTDS. Pressure should be close to desired pressure.
   [Note: For a subatmospheric sampling system, if the canister is at atmospheric pressure when the field final pressure check is performed, the sampling period may be suspect. This information should be noted on the sampling field data sheet.]
   Time of day is also recorded.
8. Upon sample completion at the location, the appropriate information is recorded on the FTDS.
9. An identification tag is attached to the canister. Canister serial number, sample number, location, and date, as a minimum, are recorded on the tag. The canisters will be routed directly back to the analytical laboratory.

COMPENDIUM METHOD TO-15
CANISTER SAMPLING FIELD TEST DATA SHEET

A. GENERAL INFORMATION

SITE LOCATION: _____
SITE ADDRESS: _____
_____
SAMPLING DATE: _____

SHIPPING DATE: _____
CANISTER SERIAL NO.: _____
SAMPLER ID: _____
OPERATOR: _____
CANISTER LEAK CHECK DATE: _____

B. SAMPLING INFORMATION

	TEMPERATURE				PRESSURE	
	INTERIOR	AMBIENT	MAXIMUM	MINIMUM	CANISTER PRESSURE	
START						
STOP						

	SAMPLING TIMES		FLOW RATES		
	LOCAL TIME	ELAPSED TIME METER READING	MANIFOLD FLOW RATE	CANISTER FLOW RATE	FLOW CONTROLLER READOUT
START					
STOP					

SAMPLING SYSTEM CERTIFICATION DATE: _____
QUARTERLY RECERTIFICATION DATE: _____

C. LABORATORY INFORMATION

DATA RECEIVED: _____
RECEIVED BY: _____
INITIAL PRESSURE: _____
FINAL PRESSURE: _____
DILUTION FACTOR: _____
ANALYSIS
GC-FID-ECD DATE: _____
GC-MSD-SCAN DATE: _____
GC-MSD-SIM DATE: _____
RESULTS*: _____
_____
GC-FID-ECD: _____
GC-MSD-SCAN: _____
GC-MSD-SIM: _____

_____
SIGNATURE/TITLE

Pace Analytical®
Field Services Division

VOC Canister Sampling

(TO-15) Field Data Sheet

Project _____ Canister No. _____

Test Location _____ Certification Lot No. _____

Date _____ Test _____ Run _____ Method of Flow Control _____

Operator(s) _____ Controller No. * _____

	Canister Vacuum		Barometric Pressure	Ambient
	Date and Time (24HR.)	mm Hg or Inches Hg	mm Hg or Inches Hg	Temp. (°F)
Pre Test		(Gauge)		
Post Test		(Gauge)		

Site Conditions: _____

_____

_____

_____

General Comments: _____

_____

_____

_____

_____

_____

* (24 Hr. controller calibrated to 3.8 cc/min.)

Appendix E

Pace Analytical Standard Operating Procedures and Method Limits

Cleaning, Certification, Leak Checking and Preparation for Shipment of SUMMA Passivated Canisters (ENV-SOP-MIN4-0002)

Analysis of Whole Air Sample for Volatile Organic Compound by GC/MS EPA TO15/TO14 (ENV-SOP-MIN4-0005)

The Appendix E SOPs will be provided electronically

Pace Analytical Services, LLC
Method Detection Limits and Reporting Limits
by EPA TO15

Analyte	CAS #	MDL (ppbv)	PRL (ppbv)	MW	MDL (ug/m³)	PRL (ug/m³)	LCS Lower	LCS Upper	DUP RPD
1,1,1-Trichloroethane	71-55-6	0.0558	0.2	133.4047	0.309	1.11	70	135	25
1,1,2,2-Tetrachloroethane	79-34-5	0.0419	0.1	167.8498	0.292	0.698	70	146	25
1,1,2-Trichloroethane	79-00-5	0.0452	0.1	133.4047	0.250	0.555	70	135	25
1,1,2-Trichlorotrifluoroethane	76-13-1	0.0724	0.2	187.3762	0.568	1.56	63	139	25
1,1-Dichloroethane	75-34-3	0.0546	0.2	98.9596	0.225	0.823	70	134	25
1,1-Dichloroethene	75-35-4	0.0676	0.2	96.9438	0.274	0.806	70	137	25
1,2,4-Trichlorobenzene	120-82-1	0.403	1	181.4487	3.73	7.54	60	133	25
1,2,4-Trimethylbenzene	95-63-6	0.0904	0.2	120.1958	0.452	0.999	70	137	25
1,2-Dibromoethane	106-93-4	0.0468	0.1	187.8616	0.366	0.781	70	140	25
1,2-Dichlorobenzene	95-50-1	0.0814	0.2	147.0036	0.498	1.22	70	137	25
1,2-Dichloroethane	107-06-2	0.0565	0.1	98.9596	0.150	0.411	70	136	25
1,2-Dichloropropane	78-87-5	0.0490	0.2	112.9864	0.230	0.939	70	136	25
1,3,5-Trimethylbenzene	108-67-8	0.0798	0.2	120.1910	0.399	0.999	70	133	25
1,3-Butadiene	106-99-0	0.0567	0.2	54.0914	0.128	0.450	64	143	25
1,3-Dichlorobenzene	541-73-1	0.0851	0.2	147.0036	0.581	1.22	70	137	25
1,4-Dichlorobenzene	106-46-7	0.164	0.5	147.0036	1.00	3.06	70	134	25
2-Butanone (MEK)	78-93-3	0.123	1	72.1057	0.369	3.00	65	143	25
2-Hexanone	591-78-6	0.170	1	100.1589	0.705	4.16	60	148	25
2-Propanol	67-63-0	0.279	1	60.1	0.697	2.50	65	135	25
4-Ethyltoluene	622-96-8	0.114	0.5	120.1958	0.570	2.50	70	132	25
4-Methyl-2-pentanone (MIBK)	108-10-1	0.124	1	100.1602	0.518	4.16	70	135	25
Acetone	67-64-1	0.499	1	58.0798	1.25	2.41	59	132	25
Benzene	71-43-2	0.0471	0.1	78.1134	0.153	0.325	70	134	25
Benzyl Chloride	100-44-7	0.228	0.5	126.58	1.20	2.63	56	150	25
Bromodichloromethane	75-27-4	0.0537	0.2	163.8289	0.366	1.36	70	142	25
Bromoform	75-25-2	0.135	0.5	252.7309	1.42	5.25	69	150	25
Bromomethane	74-83-9	0.0575	0.2	94.9387	0.227	0.789	61	141	25
Carbon Disulfide	75-15-0	0.0692	0.2	76.131	0.219	0.633	66	134	25
Carbon tetrachloride	56-23-5	0.0671	0.2	153.823	0.429	1.28	60	145	25
Chlorobenzene	108-90-7	0.0588	0.2	112.5585	0.275	0.936	70	130	25
Chloroethane	75-00-3	0.0969	0.2	64.5145	0.260	0.536	65	143	25

Pace Analytical Services, LLC
Method Detection Limits and Reporting Limits
by EPA TO15

							LCS		DUP
Analyte	CAS #		PRL (ppbv)	MW	MDL (ug/m^3)	PRL (ug/m^3)	Lower	Upper	RPD
Chloroform	67-66-3	0.0395	0.1	119.3779	0.196	0.496	70	132	25
Chloromethane	74-87-3	0.0742	0.2	50.4877	0.136	0.420	58	140	25
cis-1,2-Dichloroethene	156-59-2	0.0543	0.2	96.9438	0.219	0.806	70	136	25
cis-1,3-Dichloropropene	10061-01-5	0.0659	0.2	110.9706	0.304	0.923	70	136	25
Cyclohexane	110-82-7	0.101	0.5	84.1608	0.353	1.75	70	133	25
Dibromochloromethane	124-48-1	0.0890	0.2	208.2799	0.719	1.73	68	149	25
Dichlorodifluoromethane	75-71-8	0.0584	0.2	120.9138	0.295	1.01	69	130	25
Dichlorotetrafluoroethane	76-14-2	0.0615	0.2	170.9216	0.457	1.42	68	130	25
Ethanol	64-17-5	0.424	1	46.07	0.812	1.92	65	146	25
Ethyl Acetate	141-78-6	0.0518	0.2	88.106	0.190	0.733	68	116	25
Ethyl Benzene	100-41-4	0.0690	0.2	106.167	0.305	0.883	70	133	25
Hexachlorobutadiene	87-68-3	0.181	0.5	260.762	1.967	5.42	59	140	25
m&p-Xylene	106-42-3	0.158	0.4	106.167	0.699	1.77	70	133	25
Methyl Tert Butyl Ether	1634-04-4	0.183	1	88.1492	0.663	1.86	70	132	25
Methylene chloride	75-0902	0.267	1	84.9328	0.944	3.53	67	132	25
Naphthalene	91-20-3	0.248	0.5	128.1732	1.32	2.66	55	136	25
n-Heptane	142-82-5	0.0913	0.2	100.2034	0.380	0.833	64	136	25
n-Hexane	110-54-3	0.0867	0.2	86.1766	0.331	0.716	70	130	25
o-Xylene	95-47-6	0.0790	0.2	106.167	0.344	0.883	70	132	25
Propylene	115-07-1	0.0816	0.2	42.0804	0.143	0.350	37	150	25
Styrene	100-42-5	0.0794	0.2	104.1512	0.344	0.866	70	139	25
Tetrachloroethene	127-18-4	0.0455	0.1	165.834	0.314	0.689	70	133	25
Tetrahydrofuran	109-99-9	0.0870	0.2	72.1066	0.261	0.600	62	141	25
Toluene	108-88-3	0.0916	0.2	92.1402	0.351	0.766	70	130	25
trans-1,2-dichloroethene	156-60-5	0.0706	0.2	96.9438	0.285	0.806	70	132	25
trans-1,3-Dichloropropene	10061-02-6	0.0953	0.2	110.9706	0.440	0.923	70	135	25
Trichloroethene	79-01-6	0.0470	0.1	131.3889	0.257	0.546	70	135	25
Trichlorofluoromethane	75-69-4	0.0681	0.2	137.3684	0.366	1.14	59	140	25
Vinyl Acetate	108-05-4	0.0754	0.2	86.0902	0.270	0.716	57	150	25
Vinyl chloride	75-01-4	0.0481	0.1	62.4987	0.126	0.260	70	141	25

Pace Analytical Services, LLC
Method Detection Limits and Reporting Limits
by EPA TO15

EXTRA ANALYTES (available upon request at an additional cost)

							LCS		DUP
Analyte	CAS #		PRL (ppbv)	MW	MDL (ug/m^3)	PRL (ug/m^3)	Lower	Upper	RPD
1,2,3-Trimethylbenzene	526-73-8	0.0807	0.2	120.19	0.403	0.998	69	150	25
1,4-Dioxane	123-91-1	0.205	1	88.1051	0.751	3.66	70	145	25
2,2,4-Trimethylpentane	540-84-1	0.145	0.5	114.22	0.689	2.37	70	140	25
Acrolein	107-02-8	0.237	0.5	56.06	0.553	1.17	65	150	25
Acrylonitrile	107-13-1	0.145	0.5	53.06	0.320	1.10	64	142	25
Allyl Chloride	107-05-1	0.234	0.5	76.525	0.744	1.59	60	147	25
Chlorodifluoromethane	75-45-6	0.184	0.5	86.47	0.662	1.80	68	142	25
Di-Isopropyl Ether	108-20-3	0.0795	1	102.1748	0.338	4.25	70	136	25
Ethyl Tert-Butyl Ether	637-92-3	0.175	1	102.1748	0.741	4.25	70	136	25
Isopentane	78-78-4	0.0997	0.5	72.15	0.299	1.50	44	150	25
Isopropylbenzene	98-82-8	0.0762	0.5	120.194	0.381	2.50	70	133	25
Methyl Methacrylate	80-62-6	0.0951	0.2	100.12	0.396	0.832	47	150	25
Methylcyclohexane	108-87-2	0.0950	0.5	98.186	0.388	2.04	70	137	25
N-Butylbenzene	104-51-8	0.201	0.5	134.2206	1.12	2.79	70	148	25
N-Propylbenzene	103-65-1	0.0805	0.5	120.1938	0.402	2.50	70	145	25
p-Isopropyltoluene	99-87-6	0.0922	0.2	134.22	0.515	1.12	70	143	25
Sec-Butylbenzene	135-98-8	0.155	0.5	134.2206	0.866	2.79	70	142	25
Tert Amyl Methyl Ether	994-05-8	0.243	1	102.1748	1.03	4.25	70	135	25
Tert Butyl Alcohol (TBA)	75-65-0	0.326	1	74.12	1.00	3.08	63	143	25
Tert-Butyl Benzene	98-06-6	0.0959	0.2	134.22	0.535	1.12	70	142	25
Vinyl Bromide	593-60-2	0.0810	0.2	106.95	0.360	0.888	70	140	25
THC as Gas (C4-C12)		11.95	23.9		51.9	104	59	150	25
Xylene (Total)	1330-20-7	0.1583	0.6	106.17	0.699	2.65	70	138	25

Surrogates								
1,4-Dichlorobenzene-d4 (S)	3855-82-1						30	150
Hexane-d14 (S)	21666-38-6						30	150
Toluene-d8 (S)	2037-26-5						50	150

Highlighted cells are calculated results

Appendix F

Quality Assurance Project Plan

WENCK File #2606-0009
February 2019

Quality Assurance Project Plan

Water Gremlin Company

Prepared for:
Water Gremlin Company

Site Address:
4400 Otter Lake Road
White Bear Township, MN
55110

WENCK
Responsive partner. Exceptional outcomes.

Prepared by:
WENCK
1802 Woodlane Drive
Woodbury, MN 55125
Phone: 651-294-4580
Fax: 651-228-1969

Table of Contents

1.0 Project Description

The Ambient Air Monitoring Plan (AAMP) is designed to assess facility potential air emissions of TDCE in order to evaluate assumptions for assessing health risk. Other VOCs from US EPA's Compendium Method TO-15 (TO-15) will be analyzed along with TDCE. However, TDCE is the only VOC from the facility anticipated to be potentially observed in ambient air. Other VOCs could be anticipated in ambient air from background and other nearby VOC sources as well as mobile sources (motor vehicles) given the proximity of roadways to the proposed monitors.

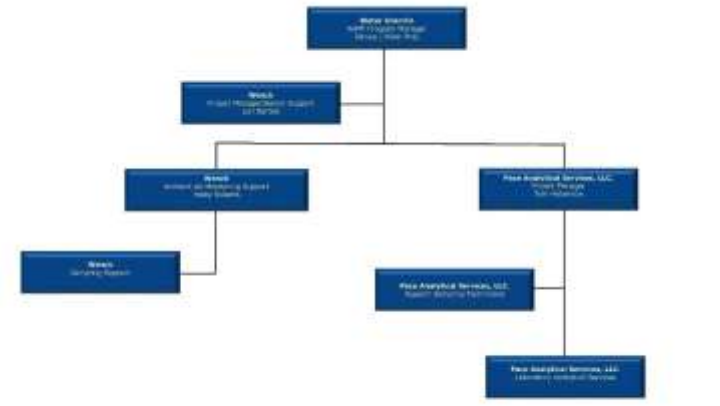
Quality Assurance (QA) refers to the system of activities to ensure that the data quality is sufficient to achieve the project goal. These activities include quality planning, personnel training, standardization of procedures, documentation, data validation, and data quality evaluations (audits). Quality Control (QC) refers to operational techniques such as instrument checks, and flow rate checks calibration checks, and field blanks if appropriate.

The Pace Analytical standard operating procedures (SOPs) will be adhered to as it pertains to calibrations and QC limit requirements.

The purpose of the Quality Assurance Project Plan (QAPP) is to specify the procedures to ensure that the data accuracy, precision, completeness, and representativeness are known, documented, and are sufficient to achieve the project goal.

The QAPP objectives are to ensure that the monitoring data is: 1) technically sound and defensible, and 2) is of sufficient quality to achieve the project goal.

2.0 Organizational Chart of Responsibility



NOTE: Specific names subject to change.

3.0 Data Quality Objectives

Environmental measurements have inherent limitations arising from equipment problems, procedural deviations, and changes in ambient conditions. Most environmental measurements are analyses made for extremely low concentrations of constituents and are subject to chemical interferences, instrument limitations, and uncertainties that affect the accuracy of the determination. It is essential to minimize these variable factors so that the measurements accurately reflect the character of the sample collected. All data gathered during the course of the AAMP, or processed by the laboratory, will meet objectives of accuracy, precision, completeness, representativeness, and comparability. These characteristics are defined as follows:

Accuracy – the closeness of agreement between an observed value and an accepted reference value. The difference between the observed value and the reference value includes components of both systematic error (bias) and random error. Laboratories assess the overall accuracy of their instruments and analytical methods (independent of sample or matrix effects) through the measurement of "standards", materials of accepted reference value. Accuracy will vary from analysis to analysis because of individual sample and matrix effects. In an individual analysis, accuracy can be measured and expressed in terms of the recovery of surrogate compounds (organic analyses). This gives an indication of expected recovery for analytes tending to behave chemically like the spiked or surrogate compounds.

Precision – the agreement among a set of replicate measurements without consideration of the "true" or accurate value, that is, variability between measurements of the same material for the same analyte. Precision is measured in a variety of ways, including statistically, such as calculating variance or standard deviation. For quality control purposes, 5% of the collected samples will be used as laboratory duplicates. The Pace Analytical standard operating procedures (SOPs) will be adhered to as it pertains to calibrations and QC limit requirements.

Completeness – a measure of the amount of valid data obtained from a measurement system compared to the amount that was expected to be obtained under correct normal conditions.

Representativeness – a qualitative parameter that expresses the degree to which the data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, process condition, or an environmental condition. Representativeness is a qualitative parameter that is dependent upon the proper design of the sampling program and the laboratory QC protocol.

Comparability – a qualitative parameter that expresses the confidence with which one data set can be compared to another.

4.0 Site Selection/Sample Procedures

A summary of the strategy used in determining the number and locations of the sampling stations is included in Section 3 of the AAMP. The site locations are shown on the Figure 1 site layout.

Detailed sampling procedures have been developed for the ambient air sampling being utilized in this project. These detailed SOPs include specific information on the EPA-approved method being used and specific quality assurance, procedures, calibration, sample custody, and quality control.

5.0 Sample Custody

All field and laboratory personnel will follow the sample custody procedures specified by applicable SOPs located in Appendices D and E of the AAMP as well as EPA Compendium Method TO-15. Immediately after removing samples from the field, chain-of-custody form, will be completed and accompany the collected samples until received by the lab. Collected samples will be taken by field staff directly to the laboratory for analysis.

5.1 TEMPERATURE PRESERVATION REQUIREMENTS

The temperature requirements of the samples are shown below. Excessive heat must be avoided (e.g., do not leave in direct sunlight).

Item	Temperature Requirement	Reference
VOC canister pre- and post-sampling	No requirements	US EPA Compendium Method TO-15

5.2 PERMISSIBLE HOLDING TIMES

The permissible holding times for the sample are detailed in the attached methods. These holding times are provided in the following table:

Item	Holding Time	From:	To:	Reference
VOC canister	Less than 30 days	Completion of sample period	Time of analysis	Method TO-15

6.0 Calibrations and Frequency

Calibration procedures for the flow controllers are outlined in the Lab SOP included in Appendix E of the AAMP. All calibration activities will be documented.

7.0 Analytical Procedures

Pace Analytical Services, LLC. (Pace) will be performing the analytical laboratory services for EPA Compendium Methods TO-15. Pace has an extensive National Environmental Laboratory Accreditation Program (NELAP) Quality Assurance program to guarantee the highest quality data. TDCE for Method TO-15 will be analyzed by Gas Chromatography/Mass Spectrometry (GC/MS).

Contact information for Pace is below:

Pace Analytical Services, LLC.
1700 Elm Street SE
Minneapolis, MN 55414
Contact: Thomas Halverson
612-607-6398
tom.halverson@pacelabs.com

8.0 Data Reduction, Validation, Reporting

Data reduction and reporting are discussed in Section 5 of AAMP.

9.0 Internal Quality Control (QC)

Laboratory personnel will conduct sampling QC checks such as flow rate checks, leak checks, timer checks, and visual inspection of sampling canisters. Sampling QC checks will be conducted before and after each sampling period. All sampling QC check activities will be documented. Additional control limits and corrective actions for sampling QC checks are described in the specific step-by-step SOP included in Appendices D and E of AAMP.

The laboratory will conduct and document analytical QC checks (such as system blanks and spiked samples) specified by applicable sampling methods (Method TO-15). Pace Analytical Lab with follow the analytical TO-15 SOP for the recommended frequency and criteria of routine quality control checks

Each canister will be individually certified as clean in accordance with the Lab SOP included in Appendix E of the AAMP, so field/travel blanks are not anticipated to be necessary for this sampling.

10.0 Performance System Audits

Performance and system audits will not be conducted under this plan at this time based on the short duration of the program.

11.0 Corrective Actions

Corrective action is the process of identifying, recommending, approving, and implementing measures to counter unacceptable procedures or out-of-range QC performances that may affect data quality. Corrective action can occur during field activities, laboratory analyses, data validation, and data assessment. This discussion of corrective actions is limited to field activities. Analytical methods have their own set of corrective action criteria and will not be discussed here.

Deviations from sampling procedures that may require corrective action include failed calibration checks, incorrect operation of equipment, and sampling procedures not followed correctly.

Corrective actions for many of these deviations will simply be repair and recalibration of the equipment. However, deviations from sampling procedures that may potentially impact samples must be reported to both the Program Managers and the Project Manager, identified in Section 2.0 of this QAPP. Based on the impact and samples affected, a determination will be made on whether the data can be qualified. If the data is accepted, it will be flagged appropriately.

12.0 Reporting

Specific recordkeeping requirements are discussed in Section 5 of the AAMP.

13.0 References

United States Environmental Protection Agency (US EPA), May 1993. Air/Superfund National Technical Guidance Series, Volume IV – Guidance for Ambient Air Monitoring at Superfund Sites (Revised). EPA-451/R-93-007. Office of Air Quality Planning and Standards Research, Research Triangle Park, NC.

U.S. Environmental Protection Agency (US EPA), August 1998. *Quality Assurance Handbook for Air Pollution Measurement Systems.* Volume II: Part 1. Ambient Air Quality Monitoring Program Quality System Development.

U.S. Environmental Protection Agency (US EPA), March 2001. *EPA Requirements for QA Project Plans (QA/R-5).* EPA/240/B-01/003. Office of Environmental Information Washington, DC.

U.S. Environmental Protection Agency (US EPA), January 1999. *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air: Method TO-15,* Second Edition. EPA/625/R-96/010b. Research Triangle Park, NC.

Pace Analytical Services, LLC. December 2018. Cleaning, Certification, Leak Checking and Preparation for Shipment of SUMMA Passivated Canisters (ENV-SOP-MIN4-0002)

Pace Analytical Services, LLC. October 2018. Analysis of Whole Air Sample for Volatile Organic Compound by GC/MS EPA TO1S/TO14 (ENV-SOP-MIN4-0005)

Appendix G. General public preclusion plan

Introduction

In evaluating compliance with the National Ambient Air Quality Standards (NAAQS), ambient air is considered to be areas in which the general public has access. On December 2, 2019, EPA issued a memo stating that areas controlled by the facility where measures effectively preclude general public access are not considered ambient air. This General Public Preclusion Plan documents the measures to be taken by Water Gremlin
Company (Water Gremlin) at their White Bear Lake facility to preclude the general public from entering the property.

Facility Setting

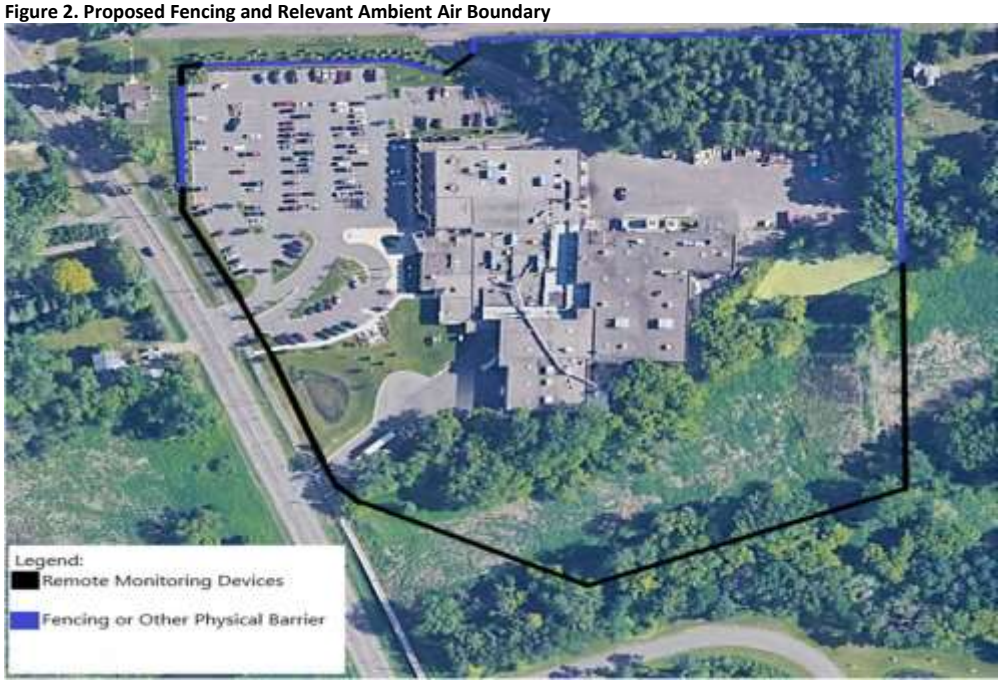
Water Gremlin is located in a suburban area of the Twin Cities, within the boundaries of White Bear Township. The facility encompasses approximately 60 acres of land. Water Gremlin conducts its operations in two complexes on the property, one set of adjoining structures comprising the North Building, and a single South Building. The ambient air boundary for the air dispersion modeling analysis at the Water Gremlin facility was placed along the property line on the northern border surrounding the North Building. Figure 1 shows the entire existing property boundary (yellow) and the general extent of the proposed ambient area boundary (red). There is no fence surrounding the entire property boundary; however, physical geographical barriers (e.g., creek, marsh, wet ground) prevent general public access to the site. Receptors were placed surrounding the South Building and outside the ambient air boundary. The South Building is intended to remain unfenced.

Figure 1. Existing Property Boundary and Proposed Ambient Air Boundary

Proposed Preclusion Measures

The North Building is located near the northwestern property corner, with entrances to the facility located to the west and north sides of the building. A fence also exists surrounding the northern boundary of the North Building parking lot. Part of the facility is surrounded by a marsh, creek, and heavily wooded area. These areas act as physical barriers precluding the public from accessing the facility. However, Water Gremlin is utilizing fencing or other equivalent physical barriers in addition to those existing physical barriers to further preclude the public from gaining access. Remote monitoring devices (cameras, drones, etc.) will be used to monitor the entrances, parking lots, and wetland areas. Figure 2 describes the proposed preclusion measures for the facility.

Figure 2. Proposed Fencing and Relevant Ambient Air Boundary



Water Gremlin will be adding No Trespassing signs every 500 feet around the property line and will install or operate remote monitoring devices (cameras, drones, etc.) for both entrances at the North Building. The combination of the physical geographical features, existing fencing, added signage discouraging trespassing, and monitoring devices will effectively restrict the general public from accessing the facility property boundary and thus protect public health.

General Public Preclusion Plan

The General Public Preclusion Plan includes multiple deterrents to preclude the general public from accessing the facility. These include:

1) Fencing: Water Gremlin will install fencing or other equivalent physical barriers surrounding the North Building as shown in Figure 2.

2) Topography: There are areas on the site with natural topography that make it difficult for the general public to reach the north building. There is a heavily wooded area to the northeast and a marsh, creek, and wetland areas to the east. A small creek runs through the Water Gremlin property between the two building complexes. These natural barriers will be supplemented with fencing where feasible.

3) No Trespassing Signs: Water Gremlin will install No Trespassing signs that include the company name and contact information every 500 feet along the property boundary. A sign will also be posted at both entrances (Otter Lake Road and Whitaker Street) indicating the property boundary and restricted entry to employees and authorized visitors.

4) Remote Monitoring Devices: Water Gremlin will install or operate (and maintain) remote monitoring equipment to maintain the effective boundary as shown in Figure 2. Cameras are being considered currently but Water Gremlin could elect to use other forms of remote monitoring (e.g. drones, etc.) as new technology is developed. Multiple cameras monitor the area during operations. Malfunctions will be observed and addressed daily during the monitoring. Remote monitor operation and maintenance will follow the manufacturer's recommendations. When remote monitoring devices are offline, security patrols will be increased until remote monitoring devices are operable.

5) Public Preclusion Breaches: The protocol for addressing a public breach on site will be added to the annual environmental training for all relevant Water Gremlin personnel. In the event of a breach, personnel will respond to the scene and escort the trespasser off-site or contact local law enforcement. Upon successful mitigation of any breach incident, Water Gremlin personnel will document the incident. Any actions to prevent future breaches such as repairing of fence, addition of signage or other appropriate Best Management Practices (BMPs) will be taken, if necessary. The breach report and any supplementary documentation will be included in the electronic records files maintained for the facility.

Appendix H. Minimum requirements for a revised VOC and TO-15 ambient monitoring

Network design for criteria and non-criteria pollutants

All air monitoring networks intending to demonstrate attainment with State and Federal ambient air quality standards must comply with the requirements in the Code of Federal Regulations Title 40, Part 58 (40 CFR Part 58).

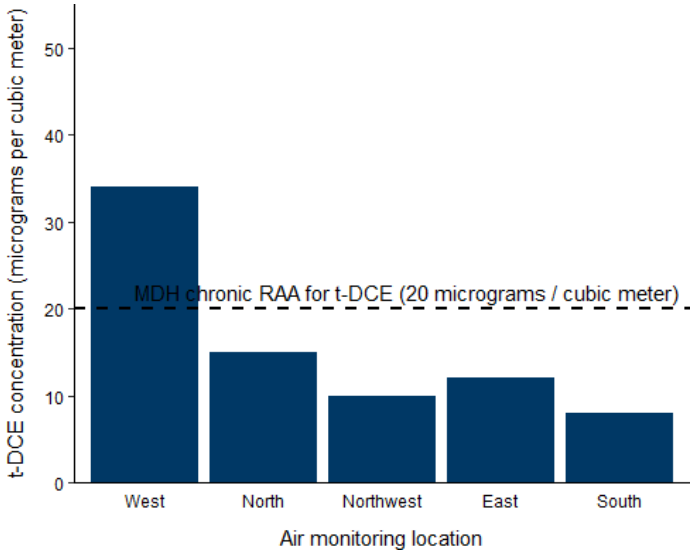
Location, number of monitors, parameters, and duration of the monitoring shall be determined through development of an air monitoring process (see *Development of an air quality monitor siting plan for determination of compliance, aq1-65* found on the MPCA website at https://www.pca.state.mn.us/sites/default/files/aq1-65.pdf).

Number and locations of monitoring sites

1. Maintain the 2 monitors located at the West and North sites.
2. Meet EPA siting requirements
    a. Permanent site
    b. Mass flow controller
    c. Install platforms
    d. Improve monitoring site security

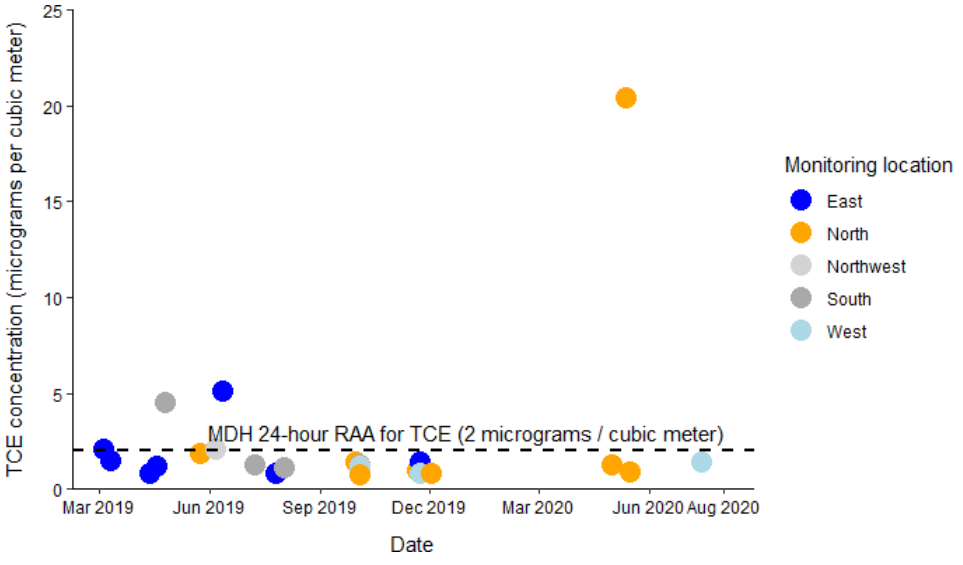
Monitoring results consistently show the West and North monitoring sites measuring the highest t-DCE and TCE concentrations on average (Figures 1 and 2). These two sites provide a "worst-case scenario" of ambient air t-DCE and TCE concentrations surrounding the facility. EAO recommends maintaining the West and North sites and discontinuing the other VOC monitoring sites since we would expect the t-DCE and TCE concentrations at the other sites to be no higher on average than t-DCE and TCE concentrations measured at the West and North sites. EAO recommends the facility make improvements to those monitoring sites including installing platforms for the VOC samplers and improving monitoring site security to meet EPA siting requirements pursuant to 40 CFR Part 58. EAO recommends that the facility also measure wind directions and velocities on their property to better identify potential offsite sources of VOCs measured at the air monitoring sites, but this is not required to be included as part of the monitoring plan.

Figure 1: Average t-DCE concentrations at Water Gremlin monitoring sites 3/1/2019 to 8/1/2020



Commented [A501]: The MDH RAA for t-DCE was 70 ug/m3 for most of this monitoring period. The dashed line is misleading. Additionally, the more appropriate value for inhalation as published by EPA in 2020 is 40 ug/m3, not 20 ug/m3, which is based on an ingestion study.

Figure 2: Detected TCE sample results at Water Gremlin air monitoring sites 3/1/2019 to 8/1/2020



Commented [A502]: Water Gremlin discontinued TCE use in early 2019 and provided a report discussing the TCE detections in ambient air. Water Gremlin was not the cause of the TCE detections in air.

Sampling frequency

1. Once every six days

Average ambient air concentrations measured around the facility once every six days are about the same as average concentrations measured once every three days and the facility's t-DCE throughput and emissions do not vary greatly on a day-to-day basis. Therefore, EAO recommends reducing the sampling frequency from once every three days to once every six days. Reducing the sampling frequency to once every six days would make the facility's sampling schedule consistent with MPCA's VOC air sampling schedule without compromising the representativeness of the measurements.

Data submittal frequency

1. Submit all monthly TO-15 results to MPCA within 30 days after the last day of the month.

Since t-DCE is a pollutant with potential risks primarily associated with long-term exposure, it is generally not necessary to receive monitoring results within days. It is more important to focus on long-term average concentrations and trends instead of day-to-day monitoring results, so monthly results submissions would suffice for evaluating potential health risks associated with t-DCE exposure and notifying the community of any potential health risks in an appropriate amount of time. Therefore, EAO recommends that the facility submit all TO-15 results to MPCA on a monthly basis, with results for a calendar month being submitted to MPCA within 30 days after the last day of the month. This would reduce the frequency which new information is reported to the public, but all monitoring results will still be made publicly available as needed.

Monitoring plan

1. MPCA Environmental Data Quality Unit may annually review and request amendments

EAO recommends that the facility include all of the information above including monitoring locations, sampling frequency and duration, data submittal process, and a quality assurance project plan (QAPP) in their air monitoring plan. The monitoring plan is not valid until approved by the MPCA Environmental Data Quality Unit. Once the monitoring plan is approved, the facility is expected to operate an air monitoring network and submit results to MPCA in accordance with the monitoring plan. The monitoring plan may be reviewed annually by the MPCA Environmental Data Quality Unit and MPCA may request amendments to the air monitoring plan after review.

MPCA VOC sites

1. MPCA VOC monitoring sites may be removed.

MPCA independently operates the Birch Lake and Columbia Park VOC monitoring sites in response to community concerns about VOC exposure for vulnerable populations. These sites are not part of any permit condition or stipulation agreement and are only for informational purposes. These sites have consistently monitored very low levels of t-DCE and TCE well below levels of health concern and EAO recommends they be discontinued to free up air monitoring resources for other locations of greater concern.

Lead

1. MPCA lead monitoring sites may be removed

The facility may demonstrate compliance with the lead NAAQS through either air dispersion modeling or ambient air monitoring described in the MPCA's industrial monitoring process. MPCA is independently operating two lead

monitoring sites near the facility in response to community concerns about exposure to lead. These sites are not intended to demonstrate the facility's compliance with the lead NAAQS. Concentrations measured at both sites have been well below the lead NAAQS; however, for the facility to demonstrate future compliance with the lead NAAQS, the facility should demonstrate compliance through air dispersion modeling or by operating its own lead air monitoring network according to an MPCA approved air monitoring plan. If the facility demonstrates compliance with the lead NAAQS via air modeling, then the facility does not need to conduct lead air monitoring. If the facility does not demonstrate compliance with the lead NAAQS via air modeling, then EAO recommends the facility operate its own lead monitoring network in accordance with an MPCA approved air monitoring plan (the lead air monitoring plan would be part of the same document as the VOC air monitoring plan). Once the facility demonstrates compliance with the lead NAAQS through either modeling or monitoring, the MPCA lead monitoring sites will be redundant and EAO recommend they be discontinued.

General Guidance on Ambient Air Monitoring for Permittees (aq2-34, 12/1/20)

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

Ambient air monitoring
for Permittees

Doc Type: Ambient Monitoring - QA/QC

Instructions: This exhibit shall apply to all emission facilities that are required to perform ambient air monitoring in order to demonstrate compliance of State and Federal ambient air quality standards or permit conditions, unless otherwise stated by special conditions of the permit.

Probe and siting criteria

Probe siting and placement for criteria pollutants should comply with specifications described in Appendix E to 40 CFR Part 58. Each monitoring site must have a site and monitor information form completed prior to submission of data (see attached Appendix A).

Probe siting for non-criteria pollutants must meet requirements prescribed in the approved method for the target parameter.

Monitoring methods

All criteria pollutants must be measured by U.S. Environmental Protection Agency (EPA) reference or equivalent methods, approved in accordance to Appendix C to 40 CFR Part 58.

A list of "Designated Reference and Equivalent Methods" and "Acceptable Methods for Non criteria Pollutants" may be obtained on the EPA's Ambient Air Monitoring Technology Information Center (AMTIC) website located at https://www.epa.gov/amtic.

The Minnesota Pollution Control Agency (MPCA) must be informed of any method change performed during the monitoring project. The method change must be reported within 45 working days from the end the reporting quarter in which the change took place.

Non criteria pollutants must be measured by methods approved by the EPA. If no method exists, MPCA will suggest candidate methods recommended by the EPA or the State.

Monitoring plan/quality assurance project plan

Permittee or operator must submit a monitoring plan that incorporates a quality assurance plan to the MPCA's Environmental Analysis and Outcomes (EAO) Division at least 30 days prior to the start date of the air monitoring project. The Agency shall review the monitoring quality assurance plan to ensure compliance with EPA requirements of monitoring networks and determine whether adequate quality control measures are utilized to ensure acceptable levels of quality data.

A. Elements of monitoring plan/quality assurance project plan

The primary guidance for developing a quality assurance plan is specified in EPA *Requirements for QA Project Plans (QA/R-5)* and Appendix A to 40 CFR Part 58. Questions regarding the monitoring plan should be sent to the air quality assurance coordinator Katie Rinker at katie.rinker@state.mn.us.

In general, the following elements must be addressed in a monitoring plan:

1. Must include a statement as to the purpose or objective of the monitoring project, including proposed sampling duration.
2. General description of all monitors and monitoring locations.
3. Description of calibration methods and reference standards.
4. Sampling schedule for manual methods.
5. Summary of standard operating procedures.
6. Description of routine quality control checks, including frequency.
7. Control limits for zero, span, and other control checks including audits.
8. Schedule of performance audits.
9. Description reference standards traceability.
10. Plan of corrective actions when monitors fail to meet control/audit limits.
11. Description of data recording and validation methods.
12. Format of data submission.

B. Audits

In addition to the quality assurance program developed by the permittee, the MPCA will conduct performance and systems audits on all criteria pollutant monitors. A similar audit format will be designed for non-criteria pollutants dependent upon pollutant parameters. Frequency of scheduled MPCA audits will be determined by the industrial monitoring process.

2. Data submittal

All permittees required to submit data to the agency must do so no later than 45 working days past the end of each calendar quarter. All data should be submitted electronically to AQRoutineReport.PCA@state.mn.us.

Monitoring site information, monitoring data, and quality control results must be compliant with submission requirements of the MPCA "Ambient Air Quality Data Submission Standard" (Appendix A of this document).

Any questions concerning data submittal should be directed to the Ambient Air Quality Data Manager, Kellie Gavin at 651-757-2379 or kellie.gavin@state.mn.us.

C. Particulate matter (PM) $PM_{2.5}$

The permittee shall include the following data assessment information as per Section 5.2 of Appendix A to 40 CFR Part 58 for each sampling quarter as applicable:

1. Precision probability limits and percentage differences from Section 4.3.1 of Appendix A to 40 CFR Part 58.
2. Flow Rate Verification results and percentage differences from Section 3.2 of Appendix A to 40 CFR Part 58.
3. All data used to calculate the reported estimates of precision and accuracy including reference standard certifications, collocated sampler, and audit results must be made available to the MPCA upon request.

D. Non criteria pollutants

Data collected for non-criteria pollutants must be accompanied by any pertinent quality control information obtained during the reporting quarter. This would include the following information, where applicable:

1. Sampling train flow rate checks.
2. Field blank data.
3. Analytical blank data.
4. Spiked sample percent recoveries.

5. Calibration check standard results.
6. Maintenance logs and internal audit results.
7. Sample duplicate results

Any documentation deemed necessary to assess reported data including, laboratory and field logbooks, mass spectra data, strip charts, and calibration data must be made available to the MPCA upon request.

3. Data validation

The requirement for data recovery is 75 percent of all data possible from each sampling quarter for automated and manual methods. Minimum recovery for the meteorological parameters of wind speed and wind direction is 80 percent from each sampling quarter.

Data that is determined to be invalid is replaced with the appropriate null code. The reasons for invalidation of data must be reported to the MPCA. There should not be any correlation between missing data periods and expected highest concentrations.

Ambient air quality data submission standard

The Environmental Analysis and Outcomes Division (EAO) of the Minnesota Pollution Control Agency collects ambient air quality data in order to assess the quality of the air in the state, and to determine compliance with both the National Ambient Air Quality Standards and Minnesota Ambient Air Quality Standards. The ambient air quality data is collected from a network of air monitoring stations maintained by the EAO and from networks required of some regulated industries. This document specifies the media, file types, data coding formats, and procedures for submitting information related to ambient air quality data to the MPCA.

8. The Minnesota air quality data handling system

The MPCA maintains a computerized data handling system that accepts, stores, and reports information relating to ambient air quality data. It is used to compile and organize air monitoring data from all air monitoring networks within the state into a useful format acceptable to the EPA. To facilitate this, all information submitted to the system must be in a standardized format.

Special input formats and a system of codes developed by the EPA for their Air Quality System (AQS) database or by the MPCA for specific needs have been adopted to ensure standardization and ease of data submission on the part of any contributing organization. In addition, a number of edit checks have been instituted to screen data being submitted to the system. The three classes of information that are accommodated in the Laboratory Information Management System: site information, ambient air quality data, and precision and accuracy information is described below.

1. Site and monitor information:

A detailed descriptive information about the location and environment of the sampling site and the parameters monitored. This includes the state, county, and city where the site is located, the geographic coordinates of the site, and its elevation above local terrain and mean sea level. It also

includes a description of the site location and the dominating influence on the sampler within approximately a one-mile radius of the sampling site.

2. Ambient air quality data:

The information to completely characterize the measurement. This includes the sampling site name, the monitor identification number, the parameters measured, the method of collection and analysis, the duration of the sample, the date and time of the sample, and the result of the measurement.

3. Precision and Accuracy data:

The information to determine the precision and accuracy of collection and analysis methods that were used to obtain ambient air quality data. This includes raw data from bi-monthly precision checks and from quarterly audits.

Site information is submitted only once for each location, although it must be updated whenever the site environment changes. Air quality data are supplied continuously to the EAO by the MPCA network of monitors and periodically by the networks of some regulated industries. Precision and accuracy data are submitted each calendar quarter.

9. Section II. Sampling site and monitor information

Before any air quality data from a monitor can be submitted, site and monitor information must be supplied to the EAO ambient air quality data manager. After the data manager has received the necessary site and monitor information, an identification number will be assigned to the monitor. The identification number must be used to submit the air quality data from the monitor.

Forms *Ambient air monitoring site information form, aq10-19a* and *Ambient air monitoring monitor information form, aq10-19b* are provided for submitting site and monitor information. Whenever the site or monitor information changes, the data manager must be notified of the changes.

A. Site information

The information required to establish a new site is in form *Ambient air monitoring site information form, aq10-19b*; this information must be sent to the data manager whenever a new site is established.

The date of the last air quality sample collected by a monitor must be provided to the data manager when a monitor is removed from a site. All monitors at the site must have a termination date on or before the site termination date.

B. Monitor information

The information required to add a monitor to a site is in form *Ambient air monitoring monitor information form, aq10-19a*; this information must be sent to the data manager for each monitor added to a site.

The date of the last air quality sample collected by a monitor must be provided to the data manager when a monitor is removed from a site.

10. Section III. Data formatting

The technical specifications for acceptable submission of air quality data are as follows:

1. **Dataset file type**: Pipe delimited text file
2. **Data coding format**: AQS formatted transactions. The structure of AQS formatted transactions can be found on the EPA's AQS website at https://aqs.epa.gov/aqsweb/documents/TransactionFormats.html.
3. **Submission**: electronic to AQRoutineReport.PCA@state.mn.us.

11. Section IV. General

All submitted data must adhere to this standard unless the EAO Division of the MPCA approves an alternative. Failure to comply with this standard will result in the rejection of the submitted data and possible violation of any agreements requiring the submission of ambient monitoring data.

Appendix I. Equipment Inventory at the time of permit issuance

Subject Item Id	Emission Unit Description	Max Design Capacity	Material	Units Numerator	Units Denominator	Commence Construction Date	Initial Startup Date	Date Modified
EQUI 101	CF Scrap Re-Melt Pot	1.5	Heat	million British thermal units	hours	1/1/1991	1/1/1991	
EQUI 102	Small Re-Melt Pot	0.5	Heat	million British thermal units	hours	1/1/1991	1/1/1991	
EQUI 103	Doe Run Melt Pot	0.5	Heat	million British thermal units	hours	1/1/1991	1/1/1991	
EQUI 104	CF Re-Melt Pot	0.34	Heat	million British thermal units	hours	1/1/1991	1/1/1991	
EQUI 221	Tin Melt Pot	1.25	Material	tons	hours	1/1/1998	1/1/1998	
EQUI 120	Emergency Generator Engine	0.6	Heat	million British thermal units	hours	5/1/2012	5/1/2012	
EQUI 121	Die Cast (DC09)	0.11	Material	tons	hours	1/1/1973	1/1/1973	
EQUI 122	Die Cast (DC12)	0.08	Material	tons	hours	1/1/1966	1/1/1966	
EQUI 123	Die Cast (DC33)	0.15	Material	tons	hours	1/1/1995	1/1/1995	
EQUI 124	Die Cast (DC14)	0.06	Material	tons	hours	1/1/1962	1/1/1962	
EQUI 125	Die Cast (DC15)	0.09	Material	tons	hours	1/1/1967	1/1/1967	
EQUI 126	Die Cast (DC21)	0.27	Material	tons	hours	1/1/1968	1/1/1968	
EQUI 157	Die Cast (DC51)	0.59	Material	tons	hours	1/1/2018	1/1/2018	
EQUI 127	Die Cast (DC08)	0.04	Material	tons	hours	1/1/1978	1/1/1978	
EQUI 128	Die Cast (DC10)	0.05	Material	tons	hours	1/1/1979	1/1/1979	
EQUI 129	Die Cast (DC17)	0.06	Material	tons	hours	1/1/1966	1/1/1966	
EQUI 130	Die Cast (DC18)	0.06	Material	tons	hours	1/1/1966	1/1/1966	
EQUI 131	Die Cast (DC36)	0.32	Material	tons	hours	1/1/1966	1/1/1966	
EQUI 132	Die Cast (DC37)	0.11	Material	tons	hours	1/1/1998	1/1/1998	
EQUI 133	Die Cast (DC25)	0.12	Material	tons	hours	1/1/1990	1/1/1990	
EQUI 134	Die Cast (DC22)	0.19	Material	tons	hours	1/1/1978	1/1/1978	
EQUI 135	Die Cast (DC35)	0.32	Material	tons	hours	1/1/1996	1/1/1996	

Subject Item Id	Emission Unit Description	Max Design Capacity	Material	Units Numerator	Units Denominator	Commence Construction Date	Initial Startup Date	Date Modified
EQUI 136	Die Cast (DC32)	0.45	Material	tons	hours	1/1/1995	1/1/1995	
EQUI 137	Die Cast (DC26)	0.12	Material	tons	hours	1/1/1992	1/1/1992	
EQUI 138	Die Cast (DC27)	0.28	Material	tons	hours	1/1/1992	1/1/1992	
EQUI 139	Die Cast (DC16)	0.3	Material	tons	hours	1/1/1973	1/1/1973	
EQUI 140	Die Cast (DC28)	0.23	Material	tons	hours	1/1/1994	1/1/1994	
EQUI 141	Die Cast (DC29)	0.13	Material	tons	hours	1/1/1995	1/1/1995	
EQUI 142	Die Cast (DC19)	0.12	Material	tons	hours	1/1/1973	1/1/1973	
EQUI 143	Die Cast (DC34)	0.22	Material	tons	hours	1/1/1984	1/1/1984	
EQUI 155	Die Cast (DC52)	0.2	Lead	tons	years	1/1/1996	1/1/1996	
EQUI 146	Die Cast (DC42)	0.6	Material	tons	hours	1/1/1999	1/1/1999	
EQUI 158	Die Cast (DC53)	0.59	Material	tons	hours	1/1/2017	1/1/2017	
EQUI 147	Die Cast (DC38)	0.6	Material	tons	hours	1/1/1998	1/1/1998	
EQUI 149	Die Cast (DC40)	0.19	Material	tons	hours	1/1/1987	1/1/1987	
EQUI 150	Die Cast (DC48)	0.31	Material	tons	hours	1/1/1992	1/1/1992	
EQUI 152	Die Cast (DC41)	0.12	Material	tons	hours	1/1/1999	1/1/1999	
EQUI 156	Die Cast (DC50)	0.43	Material	tons	hours	1/1/2008	1/1/2008	
EQUI 153	Die Cast (DC44)	0.59	Material	tons	hours	1/1/1999	1/1/1999	
EQUI 154	Die Cast (DC45)	0.51	Material	tons	hours	1/1/2000	1/1/2000	
EQUI 117	South Building R&D Coater	0.41	Coating	pounds	hours	2/15/2022	2/15/2022	
EQUI 160	Billet Saw	0.38	Material	tons	hours	1/1/1994	1/1/1994	
EQUI 167	Solvent Vapor Remediation System							
EQUI 106	Make-up Air Unit 1N	2.5	Heat	million British thermal units	hours	1/1/1993	1/1/1993	
EQUI 109	Make-up Air Unit 5N	4.95	Heat	million British thermal units	hours	1/1/2016	1/1/2016	
EQUI 115	DC Abrasive Blasting	210	Sand	pounds	hours	1/1/2015	1/1/2015	
EQUI 107	Make-up Air Unit 2N	6.05	Heat	million British thermal units	hours	1/1/2016	1/1/2016	

Subject Item Id	Emission Unit Description	Max Design Capacity	Material	Units Numerator	Units Denominator	Commence Construction Date	Initial Startup Date	Date Modified
EQUI 108	Make-up Air Unit 3N	5.61	Heat	million British thermal units	hours	1/1/2015	1/1/2015	
EQUI 111	Make-up Air Unit 9N	2.2	Heat	million British thermal units	hours	1/1/1995	1/1/1995	
EQUI 116	Battery Terminal Post Coater 30	16.3	Solvents	pounds	hours	1/1/2020	1/1/2020	
EQUI 233	Battery Terminal Post Coater 19	1.71	Coating	pounds	hours	1/1/2012	1/1/2012	1/12/2022
EQUI 110	Make-up Air Unit 6N	5.4	Heat	million British thermal units	hours	1/1/1997	1/1/1997	
EQUI 112	Make-up Air Unit 11N	4.61	Heat	million British thermal units	hours	1/1/1996	1/1/1996	
EQUI 172	Battery Terminal Post Coater 29	43.5	Solvents	pounds	hours	4/16/2020	4/16/2020	
EQUI 113	Tool room 1 Abrasive Blasting	314	Sand	pounds	hours	1/1/1979	1/1/1979	
EQUI 114	Tool room 2 Abrasive Blasting	231	Sand	pounds	hours	1/1/1989	1/1/1989	
EQUI 174	Solvent Distillation Unit							
EQUI 222	Natural Gas Bake Oven	0.3	Heat	million British thermal units	each	1/1/1998	1/1/1998	
EQUI 223	Coining Booth 1	55	Material	pounds	hours	1/1/1998	1/1/1998	
EQUI 224	Coining Booth 2	40	Material	pounds	hours	1/1/1998	1/1/1998	
EQUI 225	Coining Booth 3	46	Material	pounds	hours	1/1/1998	1/1/1998	
EQUI 226	Coining Booth 4	17	Material	pounds	hours	1/1/1998	1/1/1998	
EQUI 227	Coining Booth 5	48	Material	pounds	hours	1/1/1998	1/1/1998	
EQUI 228	Coining Booth 6	62	Material	pounds	hours	1/1/1998	1/1/1998	
EQUI 229	Coining Booth 7	52	Material	pounds	hours	1/1/1998	1/1/1998	
EQUI 230	Coining Booth 8	79	Material	pounds	hours	1/1/1998	1/1/1998	
EQUI 231	Coining Booth 9	194	Material	pounds	hours	1/1/1998	1/1/1998	
EQUI 232	Coining Booth 10	138	Material	pounds	hours	1/1/1998	1/1/1998	

Subject Item Id	Emission Unit Description	Max Design Capacity	Material	Units Numerator	Units Denominator	Commence Construction Date	Initial Startup Date	Date Modified
EQUI 240	Prototype Coater	1.32	Coating	pounds	hours	2/15/2022	2/15/2022	
EQUI 82	Battery Terminal Post Coater 6	0.82	Coating	pounds	hours	1/1/1996	1/1/1996	2/23/2021
EQUI 84	Battery Terminal Post Coater 9	1.32	Coating	pounds	hours	1/1/1998	1/1/1998	12/9/2021
EQUI 85	Battery Terminal Post Coater 10	22.06	Solvents	pounds	hours	1/1/1999	1/1/1999	
EQUI 87	Battery Terminal Post Coater 12	13.25	Solvents	pounds	hours	1/1/1998	1/1/1998	
EQUI 88	Battery Terminal Post Coater 15	4.73	Solvents	pounds	hours	1/1/1997	1/1/1997	
EQUI 89	Battery Terminal Post Coater 17	19.4	Solvents	pounds	hours	1/1/2000	1/1/2000	
EQUI 92	Battery Terminal Post Coater 20	19.69	Solvents	pounds	hours	1/1/2001	1/1/2001	
EQUI 93	Battery Terminal Post Coater 21	66.26	Solvents	pounds	hours	1/1/2004	1/1/2004	
EQUI 94	Battery Terminal Post Coater 22	15.03	Solvents	pounds	hours	1/1/2006	1/1/2006	
EQUI 95	Battery Terminal Post Coater 23	2.36	Solvents	pounds	hours	1/1/2008	1/1/2008	
EQUI 97	Battery Terminal Post Coater 25	5.25	Solvents	pounds	hours	1/1/2011	1/1/2011	
EQUI 98	Battery Terminal Post Coater 26	2.03	Solvents	pounds	hours	1/1/2012	1/1/2012	
EQUI 99	Battery Terminal Post Coater 27	17.46	Solvents	pounds	hours	1/1/2012	1/1/2012	
EQUI 100	Battery Terminal Post Coater 28	3.85	Solvents	pounds	hours	1/1/2018	1/1/2018	
EQUI 166	Coating Room Bulk Solvent Tank	5.06	Solvents	pounds	hours	1/1/1993	1/1/1993	
EQUI 173	Coating Room Soaker Tank	5.26	Solvents	pounds	hours	8/1/2019	8/1/2019	

Subject Item Id	Emission Unit Description	Max Design Capacity	Material	Units Numerator	Units Denominator	Commence Construction Date	Initial Startup Date	Date Modified
EQUI 219	Battery Terminal Post Coater 33	7.92	Coating	pounds	hours	2/16/2006	2/16/2006	
EQUI 220	Battery Terminal Post Coater 34	7.92	Coating	pounds	hours	2/16/2006	2/16/2006	

Appendix J. 40 CFR pt. 60, subp. IIII

§60.4200 Am I subject to this subpart?

(a) The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) and other persons as specified in paragraphs (a)(1) through (4) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

(1) Manufacturers of stationary CI ICE with a displacement of less than 30 liters per cylinder where the model year is:

(i) 2007 or later, for engines that are not fire pump engines;

(ii) The model year listed in Table 3 to this subpart or later model year, for fire pump engines.

(2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are:

(i) Manufactured after April 1, 2006, and are not fire pump engines, or

(ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006.

(3) Owners and operators of any stationary CI ICE that are modified or reconstructed after July 11, 2005 and any person that modifies or reconstructs any stationary CI ICE after July 11, 2005.

(4) The provisions of §60.4208 of this subpart are applicable to all owners and operators of stationary CI ICE that commence construction after July 11, 2005.

(b) The provisions of this subpart are not applicable to stationary CI ICE being tested at a stationary CI ICE test cell/stand.

(c) If you are an owner or operator of an area source subject to this subpart, you are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart applicable to area sources.

(d) Stationary CI ICE may be eligible for exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C (or the exemptions described in 40 CFR part 89, subpart J and 40 CFR part 94, subpart J, for engines that would need to be certified to standards in those parts), except that owners and operators, as well as manufacturers, may be eligible to request an exemption for national security.

(e) Owners and operators of facilities with CI ICE that are acting as temporary replacement units and that are located at a stationary source for less than 1 year and that have been properly certified as meeting the standards that would be applicable to such engine under the appropriate nonroad engine provisions, are not required to meet any other provisions under this subpart with regard to such engines.

Emission Standards for Manufacturers

§60.4201 What emission standards must I meet for non-emergency engines if I am a stationary CI internal combustion engine manufacturer?

(a) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later non-emergency stationary CI ICE with a maximum engine power less than or equal to 2,237 kilowatt (KW) (3,000 horsepower (HP)) and a displacement of less than 10 liters per cylinder to the certification emission standards for new nonroad CI engines in 40 CFR 89.112, 40 CFR 89.113, 40 CFR 1039.101, 40 CFR 1039.102, 40 CFR 1039.104, 40 CFR 1039.105, 40 CFR 1039.107, and 40 CFR 1039.115, as applicable, for all pollutants, for the same model year and maximum engine power.

(b) Stationary CI internal combustion engine manufacturers must certify their 2007 through 2010 model year non-emergency stationary CI ICE with a maximum engine power greater than 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder to the emission standards in table 1 to this subpart, for all pollutants, for the same maximum engine power.

(c) Stationary CI internal combustion engine manufacturers must certify their 2011 model year and later non-emergency stationary CI ICE with a maximum engine power greater than 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder to the certification emission standards for new nonroad CI engines in 40 CFR 1039.101, 40 CFR 1039.102, 40 CFR 1039.104, 40 CFR 1039.105, 40 CFR 1039.107, and 40 CFR 1039.115, as applicable, for all pollutants, for the same maximum engine power.

(d) Stationary CI internal combustion engine manufacturers must certify the following non-emergency stationary CI ICE to the certification emission standards for new marine CI engines in 40 CFR 94.8, as applicable, for all pollutants, for the same displacement and maximum engine power:

(1) Their 2007 model year through 2012 non-emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder;

(2) Their 2013 model year non-emergency stationary CI ICE with a maximum engine power greater than or equal to 3,700 KW (4,958 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 15 liters per cylinder; and

(3) Their 2013 model year non-emergency stationary CI ICE with a displacement of greater than or equal to 15 liters per cylinder and less than 30 liters per cylinder.

(e) Stationary CI internal combustion engine manufacturers must certify the following non-emergency stationary CI ICE to the certification emission standards and other requirements for new marine CI engines in 40 CFR 1042.101, 40 CFR 1042.107, 40 CFR 1042.110, 40 CFR 1042.115, 40 CFR 1042.120, and 40 CFR 1042.145, as applicable, for all pollutants, for the same displacement and maximum engine power:

(1) Their 2013 model year non-emergency stationary CI ICE with a maximum engine power less than 3,700 KW (4,958 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 15 liters per cylinder; and

(2) Their 2014 model year and later non-emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder.

(f) Notwithstanding the requirements in paragraphs (a) through (c) of this section, stationary non-emergency CI ICE identified in paragraphs (a) and (c) may be certified to the provisions of 40 CFR part 94 or, if Table 1 to 40 CFR 1042.1 identifies 40 CFR part 1042 as being applicable, 40 CFR part 1042, if the engines will be used solely in either or both of the following locations:

(1) Remote areas of Alaska; and

(2) Marine offshore installations.

(g) Notwithstanding the requirements in paragraphs (a) through (f) of this section, stationary CI internal combustion engine manufacturers are not required to certify reconstructed engines; however manufacturers may elect to do so. The reconstructed engine must be certified to the emission standards specified in paragraphs (a) through (e) of this section that are applicable to the model year, maximum engine power, and displacement of the reconstructed stationary CI ICE.

(h) Stationary CI ICE certified to the standards in 40 CFR part 1039 and equipped with auxiliary emission control devices (AECDs) as specified in 40 CFR 1039.665 must meet the Tier 1 certification emission standards for new nonroad CI engines in 40 CFR 89.112 while the AECD is activated during a qualified emergency situation. A qualified emergency situation is defined in 40 CFR 1039.665. When the qualified emergency situation has ended and the AECD is deactivated, the engine must resume meeting the otherwise applicable emission standard specified in this section.

§60.4202 What emission standards must I meet for emergency engines if I am a stationary CI internal combustion engine manufacturer?

(a) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE with a maximum engine power less than or equal to 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder that are not fire pump engines to the emission standards specified in paragraphs (a)(1) through (2) of this section.

(1) For engines with a maximum engine power less than 37 KW (50 HP):

(i) The certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants for model year 2007 engines, and

(ii) The certification emission standards for new nonroad CI engines in 40 CFR 1039.104, 40 CFR 1039.105, 40 CFR 1039.107, 40 CFR 1039.115, and table 2 to this subpart, for 2008 model year and later engines.

(2) For engines with a maximum engine power greater than or equal to 37 KW (50 HP), the certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants beginning in model year 2007.

(b) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE with a maximum engine power greater than 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder that are not fire pump engines to the emission standards specified in paragraphs (b)(1) through (2) of this section.

(1) For 2007 through 2010 model years, the emission standards in table 1 to this subpart, for all pollutants, for the same maximum engine power.

(2) For 2011 model year and later, the certification emission standards for new nonroad CI engines for engines of the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants.

(c) [Reserved]

(d) Beginning with the model years in table 3 to this subpart, stationary CI internal combustion engine manufacturers must certify their fire pump stationary CI ICE to the emission standards in table 4 to this subpart, for all pollutants, for the same model year and NFPA nameplate power.

(e) Stationary CI internal combustion engine manufacturers must certify the following emergency stationary CI ICE that are not fire pump engines to the certification emission standards for new marine CI engines in 40 CFR 94.8, as applicable, for all pollutants, for the same displacement and maximum engine power:

(1) Their 2007 model year through 2012 emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder;

(2) Their 2013 model year and later emergency stationary CI ICE with a maximum engine power greater than or equal to 3,700 KW (4,958 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 15 liters per cylinder;

(3) Their 2013 model year emergency stationary CI ICE with a displacement of greater than or equal to 15 liters per cylinder and less than 30 liters per cylinder; and

(4) Their 2014 model year and later emergency stationary CI ICE with a maximum engine power greater than or equal to 2,000 KW (2,682 HP) and a displacement of greater than or equal to 15 liters per cylinder and less than 30 liters per cylinder.

(f) Stationary CI internal combustion engine manufacturers must certify the following emergency stationary CI ICE to the certification emission standards and other requirements applicable to Tier 3 new marine CI engines in 40 CFR 1042.101, 40 CFR 1042.107, 40 CFR 1042.115, 40 CFR 1042.120, and 40 CFR 1042.145, for all pollutants, for the same displacement and maximum engine power:

(1) Their 2013 model year and later emergency stationary CI ICE with a maximum engine power less than 3,700 KW (4,958 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 15 liters per cylinder; and

(2) Their 2014 model year and later emergency stationary CI ICE with a maximum engine power less than 2,000 KW (2,682 HP) and a displacement of greater than or equal to 15 liters per cylinder and less than 30 liters per cylinder.

(g) Notwithstanding the requirements in paragraphs (a) through (d) of this section, stationary emergency CI internal combustion engines identified in paragraphs (a) and (c) may be certified to the provisions of 40 CFR part 94 or, if Table 2 to 40 CFR 1042.101 identifies Tier 3 standards as being applicable, the requirements applicable to Tier 3 engines in 40 CFR part 1042, if the engines will be used solely in either or both of the following locations:

(1) Remote areas of Alaska; and

(2) Marine offshore installations.

(h) Notwithstanding the requirements in paragraphs (a) through (f) of this section, stationary CI internal combustion engine manufacturers are not required to certify reconstructed engines; however manufacturers may elect to do so. The reconstructed engine must be certified to the emission standards specified in paragraphs (a) through (f) of this section that are applicable to the model year, maximum engine power and displacement of the reconstructed emergency stationary CI ICE.

§60.4203 How long must my engines meet the emission standards if I am a manufacturer of stationary CI internal combustion engines?

Engines manufactured by stationary CI internal combustion engine manufacturers must meet the emission standards as required in §§60.4201 and 60.4202 during the certified emissions life of the engines.

Emission Standards for Owners and Operators

§60.4204 What emission standards must I meet for non-emergency engines if I am an owner or operator of a stationary CI internal combustion engine?

(a) Owners and operators of pre-2007 model year non-emergency stationary CI ICE with a displacement of less than 10 liters per cylinder must comply with the emission standards in table 1 to this subpart. Owners and operators of pre-2007 model year non-emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder must comply with the emission standards in 40 CFR 94.8(a)(1).

(b) Owners and operators of 2007 model year and later non-emergency stationary CI ICE with a displacement of less than 30 liters per cylinder must comply with the emission standards for new CI engines in §60.4201 for their 2007 model year and later stationary CI ICE, as applicable.

(c) Owners and operators of non-emergency stationary CI engines with a displacement of greater than or equal to 30 liters per cylinder must meet the following requirements:

(1) For engines installed prior to January 1, 2012, limit the emissions of NO_X in the stationary CI internal combustion engine exhaust to the following:

(i) 17.0 grams per kilowatt-hour (g/KW-hr) (12.7 grams per horsepower-hr (g/HP-hr)) when maximum engine speed is less than 130 revolutions per minute (rpm);

(ii) $45 \cdot n^{-0.2}$ g/KW-hr ($34 \cdot n^{-0.2}$ g/HP-hr) when maximum engine speed is 130 or more but less than 2,000 rpm, where n is maximum engine speed; and

(iii) 9.8 g/KW-hr (7.3 g/HP-hr) when maximum engine speed is 2,000 rpm or more.

(2) For engines installed on or after January 1, 2012 and before January 1, 2016, limit the emissions of NO_X in the stationary CI internal combustion engine exhaust to the following:

(i) 14.4 g/KW-hr (10.7 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii) $44 \cdot n^{-0.23}$ g/KW-hr ($33 \cdot n^{-0.23}$ g/HP-hr) when maximum engine speed is greater than or equal to 130 but less than 2,000 rpm and where n is maximum engine speed; and

(iii) 7.7 g/KW-hr (5.7 g/HP-hr) when maximum engine speed is greater than or equal to 2,000 rpm.

(3) For engines installed on or after January 1, 2016, limit the emissions of NO_X in the stationary CI internal combustion engine exhaust to the following:

(i) 3.4 g/KW-hr (2.5 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii) $9.0 \cdot n^{-0.20}$ g/KW-hr ($6.7 \cdot n^{-0.20}$ g/HP-hr) where n (maximum engine speed) is 130 or more but less than 2,000 rpm; and

(iii) 2.0 g/KW-hr (1.5 g/HP-hr) where maximum engine speed is greater than or equal to 2,000 rpm.

(4) Reduce particulate matter (PM) emissions by 60 percent or more, or limit the emissions of PM in the stationary CI internal combustion engine exhaust to 0.15 g/KW-hr (0.11 g/HP-hr).

(d) Owners and operators of non-emergency stationary CI ICE with a displacement of less than 30 liters per cylinder who conduct performance tests in-use must meet the not-to-exceed (NTE) standards as indicated in §60.4212.

(e) Owners and operators of any modified or reconstructed non-emergency stationary CI ICE subject to this subpart must meet the emission standards applicable to the model year, maximum engine power, and displacement of the modified or reconstructed non-emergency stationary CI ICE that are specified in paragraphs (a) through (d) of this section.

(f) Owners and operators of stationary CI ICE certified to the standards in 40 CFR part 1039 and equipped with AECDs as specified in 40 CFR 1039.665 must meet the Tier 1 certification emission standards for new nonroad CI engines in 40 CFR 89.112 while the AECD is activated during a qualified emergency situation. A qualified emergency

situation is defined in 40 CFR 1039.665. When the qualified emergency situation has ended and the AECD is deactivated, the engine must resume meeting the otherwise applicable emission standard specified in this section.

§60.4205 What emission standards must I meet for emergency engines if I am an owner or operator of a stationary CI internal combustion engine?

(a) Owners and operators of pre-2007 model year emergency stationary CI ICE with a displacement of less than 10 liters per cylinder that are not fire pump engines must comply with the emission standards in Table 1 to this subpart. Owners and operators of pre-2007 model year emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards in 40 CFR 94.8(a)(1).

(b) Owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in §60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE.

(c) Owners and operators of fire pump engines with a displacement of less than 30 liters per cylinder must comply with the emission standards in table 4 to this subpart, for all pollutants.

(d) Owners and operators of emergency stationary CI engines with a displacement of greater than or equal to 30 liters per cylinder must meet the requirements in this section.

(1) For engines installed prior to January 1, 2012, limit the emissions of NO_X in the stationary CI internal combustion engine exhaust to the following:

(i) 17.0 g/KW-hr (12.7 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii) $45 \cdot n^{-0.2}$ g/KW-hr ($34 \cdot n^{-0.2}$ g/HP-hr) when maximum engine speed is 130 or more but less than 2,000 rpm, where n is maximum engine speed; and

(iii) 9.8 g/kW-hr (7.3 g/HP-hr) when maximum engine speed is 2,000 rpm or more.

(2) For engines installed on or after January 1, 2012, limit the emissions of NO_X in the stationary CI internal combustion engine exhaust to the following:

(i) 14.4 g/KW-hr (10.7 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii) $44 \cdot n^{-0.23}$ g/KW-hr ($33 \cdot n^{-0.23}$ g/HP-hr) when maximum engine speed is greater than or equal to 130 but less than 2,000 rpm and where n is maximum engine speed; and

(iii) 7.7 g/KW-hr (5.7 g/HP-hr) when maximum engine speed is greater than or equal to 2,000 rpm.

(3) Limit the emissions of PM in the stationary CI internal combustion engine exhaust to 0.40 g/KW-hr (0.30 g/HP-hr).

(e) Owners and operators of emergency stationary CI ICE with a displacement of less than 30 liters per cylinder who conduct performance tests in-use must meet the NTE standards as indicated in §60.4212.

(f) Owners and operators of any modified or reconstructed emergency stationary CI ICE subject to this subpart must meet the emission standards applicable to the model year, maximum engine power, and displacement of the modified or reconstructed CI ICE that are specified in paragraphs (a) through (e) of this section.

§60.4206 How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine?

Owners and operators of stationary CI ICE must operate and maintain stationary CI ICE that achieve the emission standards as required in §§60.4204 and 60.4205 over the entire life of the engine.

Fuel Requirements for Owners and Operators

§60.4207 What fuel requirements must I meet if I am an owner or operator of a stationary CI internal combustion engine subject to this subpart?

(a) Beginning October 1, 2007, owners and operators of stationary CI ICE subject to this subpart that use dieselfuel must use diesel fuel that meets the requirements of 40 CFR 80.510(a).

(b) Beginning October 1, 2010, owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted.

(c) [Reserved]

(d) Beginning June 1, 2012, owners and operators of stationary CI ICE subject to this subpart with a displacementof greater than or equal to 30 liters per cylinder are no longer subject to the requirements of paragraph (a) of this section, and must use fuel that meets a maximum per-gallon sulfur content of 1,000 parts per million (ppm).

(e) Stationary CI ICE that have a national security exemption under §60.4200(d) are also exempt from the fuel requirements in this section.

Other Requirements for Owners and Operators

§60.4208 What is the deadline for importing or installing stationary CI ICE produced in previous model years?

(a) After December 31, 2008, owners and operators may not install stationary CI ICE (excluding fire pumpengines) that do not meet the applicable requirements for 2007 model year engines.

(b) After December 31, 2009, owners and operators may not install stationary CI ICE with a maximum engine power of less than 19 KW (25 HP) (excluding fire pump engines) that do not meet the applicable requirements for 2008 model year engines.

(c) After December 31, 2014, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 19 KW (25 HP) and less than 56 KW (75 HP) that do notmeet the applicable requirements for 2013 model year non-emergency engines.

(d) After December 31, 2013, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 56 KW (75 HP) and less than 130 KW (175 HP) that do notmeet the applicable requirements for 2012 model year non-emergency engines.

(e) After December 31, 2012, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 130 KW (175 HP), including those above 560 KW (750 HP), that do not meet the applicable requirements for 2011 model year non-emergency engines.

(f) After December 31, 2016, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 560 KW (750 HP) that do not meet the applicable requirements for 2015 model year non-emergency engines.

(g) After December 31, 2018, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power greater than or equal to 600 KW (804 HP) and less than 2,000 KW (2,680 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder that do not meet the applicable requirements for 2017 model year non-emergency engines.

(h) In addition to the requirements specified in §§60.4201, 60.4202, 60.4204, and 60.4205, it is prohibited to import stationary CI ICE with a displacement of less than 30 liters per cylinder that do not meet the applicable requirements specified in paragraphs (a) through (g) of this section after the dates specified in paragraphs (a) through (g) of this section.

(i) The requirements of this section do not apply to owners or operators of stationary CI ICE that have been modified, reconstructed, and do not apply to engines that were removed from one existing location and reinstalled at a new location.

§60.4209 What are the monitoring requirements if I am an owner or operator of a stationary CI internal combustion engine?

If you are an owner or operator, you must meet the monitoring requirements of this section. In addition, you must also meet the monitoring requirements specified in §60.4211.

(a) If you are an owner or operator of an emergency stationary CI internal combustion engine that does not meet the standards applicable to non-emergency engines, you must install a non-resettable hour meter prior to startup of the engine.

(b) If you are an owner or operator of a stationary CI internal combustion engine equipped with a diesel particulate filter to comply with the emission standards in §60.4204, the diesel particulate filter must be installed with a backpressure monitor that notifies the owner or operator when the high backpressure limit of the engine is approached.

Compliance Requirements

§60.4210 What are my compliance requirements if I am a stationary CI internal combustion engine manufacturer?

(a) Stationary CI internal combustion engine manufacturers must certify their stationary CI ICE with a displacement of less than 10 liters per cylinder to the emission standards specified in §60.4201(a) through (c) and §60.4202(a), (b) and (d) using the certification procedures required in 40 CFR part 89, subpart B, or 40 CFR part 1039, subpart C, as applicable, and must test their engines as specified in those parts. For the purposes of this subpart, engines certified to the standards in table 1 to this subpart shall be subject to the same requirements as engines certified to the standards in 40 CFR part 89. For the purposes of this subpart, engines certified to the standards in table 4 to this subpart shall be subject to the same requirements as engines certified to the standards in 40 CFR part 89, except that engines with NFPA nameplate power of less than 37 KW (50 HP) certified to model year 2011 or later standards shall be subject to the same requirements as engines certified to the standards in 40 CFR part 1039.

(b) Stationary CI internal combustion engine manufacturers must certify their stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder to the emission standards specified in §60.4201(d) and (e) and §60.4202(e) and (f) using the certification procedures required in 40 CFR part 94, subpart C, or 40 CFR part 1042, subpart C, as applicable, and must test their engines as specified in 40 CFR part 94 or 1042, as applicable.

(c) Stationary CI internal combustion engine manufacturers must meet the requirements of 40 CFR 1039.120, 1039.125, 1039.130, and 1039.135, and 40 CFR part 1068 for engines that are certified to the emission standards in

40 CFR part 1039. Stationary CI internal combustion engine manufacturers must meet the corresponding provisions of 40 CFR part 89, 40 CFR part 94 or 40 CFR part 1042 for engines that would be covered by that part if they were nonroad (including marine) engines. Labels on such engines must refer to stationary engines, rather than or in addition to nonroad or marine engines, as appropriate. Stationary CI internal combustion engine manufacturers must label their engines according to paragraphs (c)(1) through (3) of this section.

(1) Stationary CI internal combustion engines manufactured from January 1, 2006 to March 31, 2006 (January 1, 2006 to June 30, 2006 for fire pump engines), other than those that are part of certified engine families under the nonroad CI engine regulations, must be labeled according to 40 CFR 1039.20.

(2) Stationary CI internal combustion engines manufactured from April 1, 2006 to December 31, 2006 (or, for fire pump engines, July 1, 2006 to December 31 of the year preceding the year listed in table 3 to this subpart) must be labeled according to paragraphs (c)(2)(i) through (iii) of this section:

(i) Stationary CI internal combustion engines that are part of certified engine families under the nonroad regulations must meet the labeling requirements for nonroad CI engines, but do not have to meet the labeling requirements in 40 CFR 1039.20.

(ii) Stationary CI internal combustion engines that meet Tier 1 requirements (or requirements for fire pumps) under this subpart, but do not meet the requirements applicable to nonroad CI engines must be labeled according to 40 CFR 1039.20. The engine manufacturer may add language to the label clarifying that the engine meets Tier 1 requirements (or requirements for fire pumps) of this subpart.

(iii) Stationary CI internal combustion engines manufactured after April 1, 2006 that do not meet Tier 1 requirements of this subpart, or fire pumps engines manufactured after July 1, 2006 that do not meet the requirements for fire pumps under this subpart, may not be used in the U.S. If any such engines are manufactured in the U.S. after April 1, 2006 (July 1, 2006 for fire pump engines), they must be exported or must be brought into compliance with the appropriate standards prior to initial operation. The export provisions of 40 CFR 1068.230 would apply to engines for export and the manufacturers must label such engines according to 40 CFR 1068.230.

(3) Stationary CI internal combustion engines manufactured after January 1, 2007 (for fire pump engines, after January 1 of the year listed in table 3 to this subpart, as applicable) must be labeled according to paragraphs (c)(3)(i) through (iii) of this section.

(i) Stationary CI internal combustion engines that meet the requirements of this subpart and the corresponding requirements for nonroad (including marine) engines of the same model year and HP must be labeled according to the provisions in 40 CFR parts 89, 94, 1039 or 1042, as appropriate.

(ii) Stationary CI internal combustion engines that meet the requirements of this subpart, but are not certified to the standards applicable to nonroad (including marine) engines of the same model year and HP must be labeled according to the provisions in 40 CFR parts 89, 94, 1039 or 1042, as appropriate, but the words “stationary” must be included instead of “nonroad” or “marine” on the label. In addition, such engines must be labeled according to 40 CFR 1039.20.

(iii) Stationary CI internal combustion engines that do not meet the requirements of this subpart must be labeled according to 40 CFR 1068.230 and must be exported under the provisions of 40 CFR 1068.230.

(d) An engine manufacturer certifying an engine family or families to standards under this subpart that are identical to standards applicable under 40 CFR parts 89, 94, 1039 or 1042 for that model year may certify any such family that contains both nonroad (including marine) and stationary engines as a single engine family and/or may include

any such family containing stationary engines in the averaging, banking and trading provisions applicable for such engines under those parts.

(e) Manufacturers of engine families discussed in paragraph (d) of this section may meet the labeling requirements referred to in paragraph (c) of this section for stationary CI ICE by either adding a separate label containing the information required in paragraph (c) of this section or by adding the words “and stationary” after the word “nonroad” or “marine,” as appropriate, to the label.

(f) Starting with the model years shown in table 5 to this subpart, stationary CI internal combustion engine manufacturers must add a permanent label stating that the engine is for stationary emergency use only to each new emergency stationary CI internal combustion engine greater than or equal to 19 KW (25 HP) that meets all the emission standards for emergency engines in §60.4202 but does not meet all the emission standards for non-emergency engines in §60.4201. The label must be added according to the labeling requirements specified in 40 CFR 1039.135(b). Engine manufacturers must specify in the owner's manual that operation of emergency engines is limited to emergency operations and required maintenance and testing.

(g) Manufacturers of fire pump engines may use the test cycle in table 6 to this subpart for testing fire pump engines and may test at the NFPA certified nameplate HP, provided that the engine is labeled as “Fire Pump Applications Only”.

(h) Engine manufacturers, including importers, may introduce into commerce uncertified engines or engines certified to earlier standards that were manufactured before the new or changed standards took effect until inventories are depleted, as long as such engines are part of normal inventory. For example, if the engine manufacturers' normal industry practice is to keep on hand a one-month supply of engines based on its projected sales, and a new tier of standards starts to apply for the 2009 model year, the engine manufacturer may manufacture engines based on the normal inventory requirements late in the 2008 model year, and sell those engines for installation. The engine manufacturer may not circumvent the provisions of §60.4201 or §60.4202 by stockpiling engines that are built before new or changed standards take effect. Stockpiling of such engines beyond normal industry practice is a violation of this subpart.

(i) The replacement engine provisions of 40 CFR 89.1003(b)(7), 40 CFR 94.1103(b)(3), 40 CFR 94.1103(b)(4) and 40 CFR 1068.240 are applicable to stationary CI engines replacing existing equipment that is less than 15 years old.

(j) Stationary CI ICE manufacturers may equip their stationary CI internal combustion engines certified to the emission standards in 40 CFR part 1039 with AECDs for qualified emergency situations according to the requirements of 40 CFR 1039.665. Manufacturers of stationary CI ICE equipped with AECDs as allowed by 40 CFR 1039.665 must meet all of the requirements in 40 CFR 1039.665 that apply to manufacturers. Manufacturers must document that the engine complies with the Tier 1 standard in 40 CFR 89.112 when the AECD is activated. Manufacturers must provide any relevant testing, engineering analysis, or other information in sufficient detail to support such statement when applying for certification (including amending an existing certificate) of an engine equipped with an AECD as allowed by 40 CFR 1039.665.

§60.4211 What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?

(a) If you are an owner or operator and must comply with the emission standards specified in this subpart, you must do all of the following, except as permitted under paragraph (g) of this section:

(1) Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions;

(2) Change only those emission-related settings that are permitted by the manufacturer; and

(3) Meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply to you.

(b) If you are an owner or operator of a pre-2007 model year stationary CI internal combustion engine and must comply with the emission standards specified in §§60.4204(a) or 60.4205(a), or if you are an owner or operator of a CI fire pump engine that is manufactured prior to the model years in table 3 to this subpart and must comply with the emission standards specified in §60.4205(c), you must demonstrate compliance according to one of the methods specified in paragraphs (b)(1) through (5) of this section.

(1) Purchasing an engine certified according to 40 CFR part 89 or 40 CFR part 94, as applicable, for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's specifications.

(2) Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test must have been conducted using the same methods specified in this subpart and these methods must have been followed correctly.

(3) Keeping records of engine manufacturer data indicating compliance with the standards.

(4) Keeping records of control device vendor data indicating compliance with the standards.

(5) Conducting an initial performance test to demonstrate compliance with the emission standards according to the requirements specified in §60.4212, as applicable.

(c) If you are an owner or operator of a 2007 model year and later stationary CI internal combustion engine and must comply with the emission standards specified in §60.4204(b) or §60.4205(b), or if you are an owner or operator of a CI fire pump engine that is manufactured during or after the model year that applies to your fire pump engine power rating in table 3 to this subpart and must comply with the emission standards specified in §60.4205(c), you must comply by purchasing an engine certified to the emission standards in §60.4204(b), or §60.4205(b) or (c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in paragraph (g) of this section.

(d) If you are an owner or operator and must comply with the emission standards specified in §60.4204(c) or §60.4205(d), you must demonstrate compliance according to the requirements specified in paragraphs (d)(1) through (3) of this section.

(1) Conducting an initial performance test to demonstrate initial compliance with the emission standards as specified in §60.4213.

(2) Establishing operating parameters to be monitored continuously to ensure the stationary internal combustion engine continues to meet the emission standards. The owner or operator must petition the Administrator for approval of operating parameters to be monitored continuously. The petition must include the information described in paragraphs (d)(2)(i) through (v) of this section.

(i) Identification of the specific parameters you propose to monitor continuously;

(ii) A discussion of the relationship between these parameters and NO_x and PM emissions, identifying how the emissions of these pollutants change with changes in these parameters, and how limitations on these parameters will serve to limit NO_x and PM emissions;

(iii) A discussion of how you will establish the upper and/or lower values for these parameters which will establish the limits on these parameters in the operating limitations;

(iv) A discussion identifying the methods and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments; and

(v) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.

(3) For non-emergency engines with a displacement of greater than or equal to 30 liters per cylinder, conducting annual performance tests to demonstrate continuous compliance with the emission standards as specified in §60.4213.

(e) If you are an owner or operator of a modified or reconstructed stationary CI internal combustion engine and must comply with the emission standards specified in §60.4204(e) or §60.4205(f), you must demonstrate compliance according to one of the methods specified in paragraphs (e)(1) or (2) of this section.

(1) Purchasing, or otherwise owning or operating, an engine certified to the emission standards in §60.4204(e) or §60.4205(f), as applicable.

(2) Conducting a performance test to demonstrate initial compliance with the emission standards according to the requirements specified in §60.4212 or §60.4213, as appropriate. The test must be conducted within 60 days after the engine commences operation after the modification or reconstruction.

(f) If you own or operate an emergency stationary ICE, you must operate the emergency stationary ICE according to the requirements in paragraphs (f)(1) through (3) of this section. In order for the engine to be considered an emergency stationary ICE under this subpart, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1) through (3) of this section, is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1) through (3) of this section, the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.

(1) There is no time limit on the use of emergency stationary ICE in emergency situations.

(2) You may operate your emergency stationary ICE for any combination of the purposes specified in paragraphs (f)(2)(i) through (iii) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraph (f)(3) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (f)(2).

(i) Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year.

(ii) ~~Emergency stationary ICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see §60.17), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3.~~ [vacated by May 4, 2016 court mandate]

(iii) ~~Emergency stationary ICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.~~ [vacated by May 4, 2016 court mandate]

(3) Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (f)(2) of this section. Except as provided in paragraph (f)(3)(i) of this section, the 50 hours per calendar year for non-emergency

situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(i) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:

(A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator;

(B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.

(C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.

(D) The power is provided only to the facility itself or to support the local transmission and distribution system.

(E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

(ii) [Reserved]

(g) If you do not install, configure, operate, and maintain your engine and control device according to the manufacturer's emission-related written instructions, or you change emission-related settings in a way that is not permitted by the manufacturer, you must demonstrate compliance as follows:

(1) If you are an owner or operator of a stationary CI internal combustion engine with maximum engine power less than 100 HP, you must keep a maintenance plan and records of conducted maintenance to demonstrate compliance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, if you do not install and configure the engine and control device according to the manufacturer's emission-related written instructions, or you change the emission-related settings in a way that is not permitted by the manufacturer, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of such action.

(2) If you are an owner or operator of a stationary CI internal combustion engine greater than or equal to 100 HP and less than or equal to 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after you change emission-related settings in a way that is not permitted by the manufacturer.

(3) If you are an owner or operator of a stationary CI internal combustion engine greater than 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer

installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after you change emission-related settings in a way that is not permitted by the manufacturer. You must conduct subsequent performance testing every 8,760 hours of engine operation or 3 years, whichever comes first, thereafter to demonstrate compliance with the applicable emission standards.

(h) The requirements for operators and prohibited acts specified in 40 CFR 1039.665 apply to owners or operators of stationary CI ICE equipped with AECDs for qualified emergency situations as allowed by 40 CFR 1039.665.

Testing Requirements for Owners and Operators

§60.4212 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of less than 30 liters per cylinder?

Owners and operators of stationary CI ICE with a displacement of less than 30 liters per cylinder who conduct performance tests pursuant to this subpart must do so according to paragraphs (a) through (e) of this section.

(a) The performance test must be conducted according to the in-use testing procedures in 40 CFR part 1039, subpart F, for stationary CI ICE with a displacement of less than 10 liters per cylinder, and according to 40 CFR part 1042, subpart F, for stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder.

(b) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR part 1039 must not exceed the not-to-exceed (NTE) standards for the same model year and maximum engine power as required in 40 CFR 1039.101(e) and 40 CFR 1039.102(g)(1), except as specified in 40 CFR 1039.104(d). This requirement starts when NTE requirements take effect for nonroad diesel engines under 40 CFR part 1039.

(c) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR 89.112 or 40 CFR 94.8, as applicable, must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard in 40 CFR 89.112 or 40 CFR 94.8, as applicable, determined from the following equation:

$$\text{NTE requirement for each pollutant} = (1.25) \times (\text{STD}) \qquad \text{(Eq. 1)}$$

Where:

STD = The standard specified for that pollutant in 40 CFR 89.112 or 40 CFR 94.8, as applicable.

Alternatively, stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR 89.112 or 40 CFR 94.8 may follow the testing procedures specified in §60.4213 of this subpart, as appropriate.

(d) Exhaust emissions from stationary CI ICE that are complying with the emission standards for pre-2007 model year engines in §60.4204(a), §60.4205(a), or §60.4205(c) must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard in §60.4204(a), §60.4205(a), or §60.4205(c), determined from the equation in paragraph (c) of this section.

Where:

STD = The standard specified for that pollutant in §60.4204(a), §60.4205(a), or §60.4205(c).

Alternatively, stationary CI ICE that are complying with the emission standards for pre-2007 model year engines in §60.4204(a), §60.4205(a), or §60.4205(c) may follow the testing procedures specified in §60.4213, as appropriate.

(e) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR part 1042 must not exceed the NTE standards for the same model year and maximum engine power as required in 40 CFR 1042.101(c).

§60.4213 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of greater than or equal to 30 liters per cylinder?

Owners and operators of stationary CI ICE with a displacement of greater than or equal to 30 liters per cylinder must conduct performance tests according to paragraphs (a) through (f) of this section.

(a) Each performance test must be conducted according to the requirements in §60.8 and under the specific conditions that this subpart specifies in table 7. The test must be conducted within 10 percent of 100 percent peak (or the highest achievable) load.

(b) You may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in §60.8(c).

(c) You must conduct three separate test runs for each performance test required in this section, as specified in §60.8(f). Each test run must last at least 1 hour.

(d) To determine compliance with the percent reduction requirement, you must follow the requirements as specified in paragraphs (d)(1) through (3) of this section.

(1) You must use Equation 2 of this section to determine compliance with the percent reduction requirement:

$$\frac{C_i - C_o}{C_i} \times 100 = R \qquad \text{(Eq. 2)}$$

Where:

C_i = concentration of NO_X or PM at the control device inlet,

C_o = concentration of NO_X or PM at the control device outlet, and

R = percent reduction of NO_X or PM emissions.

(2) You must normalize the NO_X or PM concentrations at the inlet and outlet of the control device to a dry basis and to 15 percent oxygen (O_2) using Equation 3 of this section, or an equivalent percent carbon dioxide (CO_2) using the procedures described in paragraph (d)(3) of this section.

$$C_{adj} = C_d \frac{5.9}{20.9 - \%\,O_2} \qquad \text{(Eq. 3)}$$

Where:

C_{adj} = Calculated NO_X or PM concentration adjusted to 15 percent O_2.

C_d = Measured concentration of NO_X or PM, uncorrected.

5.9 = 20.9 percent O_2−15 percent O_2, the defined O_2 correction value, percent.

$\%O_2$ = Measured O_2 concentration, dry basis, percent.

(3) If pollutant concentrations are to be corrected to 15 percent O_2 and CO_2 concentration is measured in lieu of O_2 concentration measurement, a CO_2 correction factor is needed. Calculate the CO_2 correction factor as described in paragraphs (d)(3)(i) through (iii) of this section.

(i) Calculate the fuel-specific F_o value for the fuel burned during the test using values obtained from Method 19, Section 5.2, and the following equation:

$$F_o = \frac{0.209_{F_d}}{F_c} \qquad \text{(Eq. 4)}$$

Where:

F_o = Fuel factor based on the ratio of O_2 volume to the ultimate CO_2 volume produced by the fuel at zero percent excess air.

0.209 = Fraction of air that is O_2, percent/100.

F_d = Ratio of the volume of dry effluent gas to the gross calorific value of the fuel from Method 19, dsm3/J (dscf/106 Btu).

F_c = Ratio of the volume of CO_2 produced to the gross calorific value of the fuel from Method 19, dsm3/J (dscf/106 Btu).

(ii) Calculate the CO_2 correction factor for correcting measurement data to 15 percent O_2, as follows:

$$X_{co_2} = \frac{5.9}{F_o} \qquad \text{(Eq. 5)}$$

Where:

X_{CO2} = CO_2 correction factor, percent.

5.9 = 20.9 percent O_2−15 percent O_2, the defined O_2 correction value, percent.

(iii) Calculate the NO_X and PM gas concentrations adjusted to 15 percent O_2 using CO_2 as follows:

$$C_{adj} = C_d \frac{X_{co_2}}{\%CO_2} \qquad \text{(Eq. 6)}$$

Where:

C_{adj} = Calculated NO_X or PM concentration adjusted to 15 percent O_2.

C_d = Measured concentration of NO_X or PM, uncorrected.

$\%CO_2$ = Measured CO_2 concentration, dry basis, percent.

(e) To determine compliance with the NO_X mass per unit output emission limitation, convert the concentration of NO_X in the engine exhaust using Equation 7 of this section:

$$ER = \frac{C_d \times 1.912 \times 10^{-3} \times Q \times T}{KW\text{-hour}} \qquad \text{(Eq. 7)}$$

Where:

ER = Emission rate in grams per KW-hour.

C_d = Measured NO_X concentration in ppm.

$1.912x10^{-3}$ = Conversion constant for ppm NO_X to grams per standard cubic meter at 25 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meter per hour.

T = Time of test run, in hours.

KW-hour = Brake work of the engine, in KW-hour.

(f) To determine compliance with the PM mass per unit output emission limitation, convert the concentration of PM in the engine exhaust using Equation 8 of this section:

$$ER = \frac{C_{adj} \times Q \times T}{KW\text{-}hour} \quad (Eq. 8)$$

Where:

ER = Emission rate in grams per KW-hour.

C_{adj} = Calculated PM concentration in grams per standard cubic meter.

Q = Stack gas volumetric flow rate, in standard cubic meter per hour.

T = Time of test run, in hours.

KW-hour = Energy output of the engine, in KW.

Notification, Reports, and Records for Owners and Operators

§60.4214 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary CI internal combustion engine?

(a) Owners and operators of non-emergency stationary CI ICE that are greater than 2,237 KW (3,000 HP), or have a displacement of greater than or equal to 10 liters per cylinder, or are pre-2007 model year engines that are greater than 130 KW (175 HP) and not certified, must meet the requirements of paragraphs (a)(1) and (2) of this section.

(1) Submit an initial notification as required in §60.7(a)(1). The notification must include the information in paragraphs (a)(1)(i) through (v) of this section.

(i) Name and address of the owner or operator;

(ii) The address of the affected source;

(iii) Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;

(iv) Emission control equipment; and

(v) Fuel used.

(2) Keep records of the information in paragraphs (a)(2)(i) through (iv) of this section.

(i) All notifications submitted to comply with this subpart and all documentation supporting any notification.

(ii) Maintenance conducted on the engine.

(iii) If the stationary CI internal combustion is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards.

(iv) If the stationary CI internal combustion is not a certified engine, documentation that the engine meets the emission standards.

(b) If the stationary CI internal combustion engine is an emergency stationary internal combustion engine, the owner or operator is not required to submit an initial notification. Starting with the model years in table 5 to this subpart, if the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, the owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record thetime of operation of the engine and the reason the engine was in operation during that time.

(c) If the stationary CI internal combustion engine is equipped with a diesel particulate filter, the owner or operator must keep records of any corrective action taken after the backpressure monitor has notified the owner or operator that the high backpressure limit of the engine is approached.

(d) If you own or operate an emergency stationary CI ICE with a maximum engine power more than 100 HP that operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §60.4211(f)(2)(ii) and (iii) or that operates for the purposes specified in §60.4211(f)(3)(i), you must submit an annual report according to the requirements in paragraphs (d)(1) through (3) of this section.

(1) The report must contain the following information:

(i) Company name and address where the engine is located.

(ii) Date of the report and beginning and ending dates of the reporting period.

(iii) Engine site rating and model year.

(iv) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place.

(v) Hours operated for the purposes specified in §60.4211(f)(2)(ii) and (iii), including the date, start time, and end time for engine operation for the purposes specified in §60.4211(f)(2)(ii) and (iii).

(vi) Number of hours the engine is contractually obligated to be available for the purposes specified in §60.4211(f)(2)(ii) and (iii).

(vii) Hours spent for operation for the purposes specified in §60.4211(f)(3)(i), including the date, start time, and end time for engine operation for the purposes specified in §60.4211(f)(3)(i). The reportmust also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine.

(2) The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year.

(3) The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in §60.4.

(e) Owners or operators of stationary CI ICE equipped with AECDs pursuant to the requirements of 40 CFR 1039.665 must report the use of AECDs as required by 40 CFR 1039.665(e).

Special Requirements

§60.4215 What requirements must I meet for engines used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands?

(a) Stationary CI ICE with a displacement of less than 30 liters per cylinder that are used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands are required to meet the applicable emission standards in §§60.4202 and 60.4205.

(b) Stationary CI ICE that are used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands are not required to meet the fuel requirements in §60.4207.

(c) Stationary CI ICE with a displacement of greater than or equal to 30 liters per cylinder that are used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands are required to meet the following emission standards:

(1) For engines installed prior to January 1, 2012, limit the emissions of NO_X in the stationary CI internal combustion engine exhaust to the following:

(i) 17.0 g/KW-hr (12.7 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii) $45 \cdot n^{-0.2}$ g/KW-hr ($34 \cdot n^{-0.2}$ g/HP-hr) when maximum engine speed is 130 or more but less than 2,000 rpm, where n is maximum engine speed; and

(iii) 9.8 g/KW-hr (7.3 g/HP-hr) when maximum engine speed is 2,000 rpm or more.

(2) For engines installed on or after January 1, 2012, limit the emissions of NO_X in the stationary CI internal combustion engine exhaust to the following:

(i) 14.4 g/KW-hr (10.7 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii) $44 \cdot n^{-0.23}$ g/KW-hr ($33 \cdot n^{-0.23}$ g/HP-hr) when maximum engine speed is greater than or equal to 130 but less than 2,000 rpm and where n is maximum engine speed; and

(iii) 7.7 g/KW-hr (5.7 g/HP-hr) when maximum engine speed is greater than or equal to 2,000 rpm.

(3) Limit the emissions of PM in the stationary CI internal combustion engine exhaust to 0.40 g/KW-hr (0.30 g/HP-hr).

§60.4216 What requirements must I meet for engines used in Alaska?

(a) Prior to December 1, 2010, owners and operators of stationary CI ICE with a displacement of less than 30 liters per cylinder located in areas of Alaska not accessible by the FAHS should refer to 40 CFR part 69 to determine the diesel fuel requirements applicable to such engines.

(b) Except as indicated in paragraph (c) of this section, manufacturers, owners and operators of stationary CI ICE with a displacement of less than 10 liters per cylinder located in remote areas of Alaska may meet the requirements of this subpart by manufacturing and installing engines meeting the requirements of 40 CFR parts 94 or 1042, as appropriate, rather than the otherwise applicable requirements of 40 CFR parts 89 and 1039, as indicated in §§60.4201(f) and 60.4202(g).

(c) Manufacturers, owners and operators of stationary CI ICE that are located in remote areas of Alaska may choose to meet the applicable emission standards for emergency engines in §§60.4202 and 60.4205, and not those for non-emergency engines in §§60.4201 and 60.4204, except that for 2014 model year and later non-emergency CI ICE, the owner or operator of any such engine that was not certified as meeting Tier 4 PM standards, must meet the applicable requirements for PM in §§60.4201 and 60.4204 or install a PM emission control device that achieves

PM emission reductions of 85 percent, or 60 percent for engines with a displacement of greater than or equal to 30 liters per cylinder, compared to engine-out emissions.

(d) The provisions of §60.4207 do not apply to owners and operators of pre-2014 model year stationary CI ICE subject to this subpart that are located in remote areas of Alaska.

(e) The provisions of §60.4208(a) do not apply to owners and operators of stationary CI ICE subject to this subpart that are located in areas of Alaska not accessible by the FAHS until after December 31, 2009.

(f) The provisions of this section and §60.4207 do not prevent owners and operators of stationary CI ICE subject to this subpart that are located in remote areas of Alaska from using fuels mixed with used lubricating oil, in volumes of up to 1.75 percent of the total fuel. The sulfur content of the used lubricating oil must be less than 200 parts per million. The used lubricating oil must meet the on-specification levels and properties for used oil in 40 CFR 279.11.

§60.4217 What emission standards must I meet if I am an owner or operator of a stationary internal combustion engine using special fuels?

Owners and operators of stationary CI ICE that do not use diesel fuel may petition the Administrator for approval of alternative emission standards, if they can demonstrate that they use a fuel that is not the fuel on which the manufacturer of the engine certified the engine and that the engine cannot meet the applicable standards required in §60.4204 or §60.4205 using such fuels and that use of such fuel is appropriate and reasonably necessary, considering cost, energy, technical feasibility, human health and environmental, and other factors, for the operation of the engine.

General Provisions

§60.4218 What parts of the General Provisions apply to me?

Table 8 to this subpart shows which parts of the General Provisions in §§60.1 through 60.19 apply to you.

Definitions

§60.4219 What definitions apply to this subpart?

As used in this subpart, all terms not defined herein shall have the meaning given them in the CAA and in subpart A of this part.

Alaska Railbelt Grid means the service areas of the six regulated public utilities that extend from Fairbanks to Anchorage and the Kenai Peninsula. These utilities are Golden Valley Electric Association; Chugach Electric Association; Matanuska Electric Association; Homer Electric Association; Anchorage Municipal Light & Power; and the City of Seward Electric System.

Certified emissions life means the period during which the engine is designed to properly function in terms of reliability and fuel consumption, without being remanufactured, specified as a number of hours of operation or calendar years, whichever comes first. The values for certified emissions life for stationary CI ICE with a displacement of less than 10 liters per cylinder are given in 40 CFR 1039.101(g). The values for certified emissions life for stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder are given in 40 CFR 94.9(a).

Combustion turbine means all equipment, including but not limited to the turbine, the fuel, air, lubrication and exhaust gas systems, control systems (except emissions control equipment), and any ancillary components and sub-

components comprising any simple cycle combustion turbine, any regenerative/recuperative cycle combustion turbine, the combustion turbine portion of any cogeneration cycle combustion system, or the combustion turbine portion of any combined cycle steam/electric generating system.

Compression ignition means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

Date of manufacture means one of the following things:

(1) For freshly manufactured engines and modified engines, date of manufacture means the date the engine is originally produced.

(2) For reconstructed engines, date of manufacture means the date the engine was originally produced, except as specified in paragraph (3) of this definition.

(3) Reconstructed engines are assigned a new date of manufacture if the fixed capital cost of the new and refurbished components exceeds 75 percent of the fixed capital cost of a comparable entirely new facility. An engine that is produced from a previously used engine block does not retain the date of manufacture of the engine in which the engine block was previously used if the engine is produced using all new components except for the engine block. In these cases, the date of manufacture is the date of reconstruction or the date the new engine is produced.

Diesel fuel means any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 degrees Celsius. One commonly used form is number 2 distillate oil.

Diesel particulate filter means an emission control technology that reduces PM emissions by trapping the particles in a flow filter substrate and periodically removes the collected particles by either physical action or by oxidizing (burning off) the particles in a process called regeneration.

Emergency stationary internal combustion engine means any stationary reciprocating internal combustion engine that meets all of the criteria in paragraphs (1) through (3) of this definition. All emergency stationary ICE must comply with the requirements specified in §60.4211(f) in order to be considered emergency stationary ICE. If the engine does not comply with the requirements specified in §60.4211(f), then it is not considered to be an emergency stationary ICE under this subpart.

(1) The stationary ICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary ICE used to pump water in the case of fire or flood, etc.

(2) The stationary ICE is operated under limited circumstances for situations not included in paragraph (1) of this definition, as specified in §60.4211(f).

(3) The stationary ICE operates as part of a financial arrangement with another entity in situations not included in paragraph (1) of this definition only as allowed in §60.4211(f)(2)(ii) or (iii) and §60.4211(f)(3)(i).

Engine manufacturer means the manufacturer of the engine. See the definition of "manufacturer" in this section.

Fire pump engine means an emergency stationary internal combustion engine certified to NFPA requirements that is used to provide power to pump water for fire suppression or protection.

Freshly manufactured engine means an engine that has not been placed into service. An engine becomes freshly manufactured when it is originally produced.

Installed means the engine is placed and secured at the location where it is intended to be operated.

Manufacturer has the meaning given in section 216(1) of the Act. In general, this term includes any person who manufactures a stationary engine for sale in the United States or otherwise introduces a new stationary engine into commerce in the United States. This includes importers who import stationary engines for sale or resale.

Maximum engine power means maximum engine power as defined in 40 CFR 1039.801.

Model year means the calendar year in which an engine is manufactured (see "date of manufacture"), except as follows:

(1) Model year means the annual new model production period of the engine manufacturer in which an engine is manufactured (see "date of manufacture"), if the annual new model production period is different than the calendar year and includes January 1 of the calendar year for which the model year is named. It may not begin before January 2 of the previous calendar year and it must end by December 31 of the named calendar year.

(2) For an engine that is converted to a stationary engine after being placed into service as a nonroad or other non-stationary engine, model year means the calendar year or new model production period in which the engine was manufactured (see "date of manufacture").

Other internal combustion engine means any internal combustion engine, except combustion turbines, which is not a reciprocating internal combustion engine or rotary internal combustion engine.

Reciprocating internal combustion engine means any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work.

Remote areas of Alaska means areas of Alaska that meet either paragraph (1) or (2) of this definition.

(1) Areas of Alaska that are not accessible by the Federal Aid Highway System (FAHS).

(2) Areas of Alaska that meet all of the following criteria:

(i) The only connection to the FAHS is through the Alaska Marine Highway System, or the stationary CI ICE operation is within an isolated grid in Alaska that is not connected to the statewide electrical grid referred to as the Alaska Railbelt Grid.

(ii) At least 10 percent of the power generated by the stationary CI ICE on an annual basis is used for residential purposes.

(iii) The generating capacity of the source is less than 12 megawatts, or the stationary CI ICE is used exclusively for backup power for renewable energy.

Rotary internal combustion engine means any internal combustion engine which uses rotary motion to convert heat energy into mechanical work.

Spark ignition means relating to a gasoline, natural gas, or liquefied petroleum gas fueled engine or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for CI and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

Stationary internal combustion engine means any internal combustion engine, except combustion turbines, that converts heat energy into mechanical work and is not mobile. Stationary ICE differ from mobile ICE in that a stationary internal combustion engine is not a nonroad engine as defined at 40 CFR 1068.30 (excluding paragraph (2)(ii) of that definition), and is not used to propel a motor vehicle, aircraft, or a vehicle used solely for competition. Stationary ICE include reciprocating ICE, rotary ICE, and other ICE, except combustion turbines.

Subpart means 40 CFR part 60, subpart IIII.

Table 1 to Subpart IIII of Part 60—Emission Standards for Stationary Pre-2007 Model Year Engines With a Displacement of <10 Liters per Cylinder and 2007-2010 Model Year Engines >2,237 KW (3,000 HP) and With a Displacement of <10 Liters per Cylinder

[As stated in §§60.4201(b), 60.4202(b), 60.4204(a), and 60.4205(a), you must comply with the following emission standards]

Maximum engine power	Emission standards for stationary pre-2007 model year engines with a displacement of <10 liters per cylinder and 2007-2010 model year engines >2,237 KW (3,000 HP) and with a displacement of <10 liters per cylinder in g/KW-hr (g/HP-hr)				
	NMHC + NO_X	**HC**	**NO_X**	**CO**	**PM**
KW<8 (HP<11)	10.5 (7.8)			8.0 (6.0)	1.0 (0.75)
8≤KW<19 (11≤HP<25)	9.5 (7.1)			6.6 (4.9)	0.80 (0.60)
19≤KW<37 (25≤HP<50)	9.5 (7.1)			5.5 (4.1)	0.80 (0.60)
37≤KW<56 (50≤HP<75)			9.2 (6.9)		
56≤KW<75 (75≤HP<100)			9.2 (6.9)		
75≤KW<130 (100≤HP<175)			9.2 (6.9)		
130≤KW<225 (175≤HP<300)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
225≤KW<450 (300≤HP<600)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
450≤KW≤560 (600≤HP≤750)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
KW>560 (HP>750)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)

Table 2 to Subpart IIII of Part 60—Emission Standards for 2008 Model Year and Later Emergency Stationary CI ICE <37 KW (50 HP) With a Displacement of <10 Liters per Cylinder

[As stated in §60.4202(a)(1), you must comply with the following emission standards]

Engine power	Emission standards for 2008 model year and later emergency stationary CI ICE <37 KW (50 HP) with a displacement of <10 liters per cylinder in g/KW-hr (g/HP-hr)

	Model year(s)	NO_X + NMHC	CO	PM
KW<8 (HP<11)	2008 +	7.5 (5.6)	8.0 (6.0)	0.40 (0.30)
8≤KW<19 (11≤HP<25)	2008 +	7.5 (5.6)	6.6 (4.9)	0.40 (0.30)
19≤KW<37 (25≤HP<50)	2008 +	7.5 (5.6)	5.5 (4.1)	0.30 (0.22)

Table 3 to Subpart IIII of Part 60—Certification Requirements for Stationary Fire Pump Engines

As stated in §60.4202(d), you must certify new stationary fire pump engines beginning with the following model years:

Engine power	Starting model year engine manufacturers must certify new stationary fire pump engines according to §60.4202(d)[1]
KW<75 (HP<100)	2011
75≤KW<130 (100≤HP<175)	2010
130≤KW≤560 (175≤HP≤750)	2009
KW>560 (HP>750)	2008

[1]Manufacturers of fire pump stationary CI ICE with a maximum engine power greater than or equal to 37 kW (50 HP) and less than 450 KW (600 HP) and a rated speed of greater than 2,650 revolutions per minute (rpm) are not required to certify such engines until three model years following the model year indicated in this Table 3 for engines in the applicable engine power category.

Table 4 to Subpart IIII of Part 60—Emission Standards for Stationary Fire Pump Engines

[As stated in §§60.4202(d) and 60.4205(c), you must comply with the following emission standards for stationary fire pump engines]

Maximum engine power	Model year(s)	NMHC + NO_X	CO	PM
KW<8 (HP<11)	2010 and earlier	10.5 (7.8)	8.0 (6.0)	1.0 (0.75)
	2011 +	7.5 (5.6)		0.40 (0.30)
8≤KW<19 (11≤HP<25)	2010 and earlier	9.5 (7.1)	6.6 (4.9)	0.80 (0.60)
	2011 +	7.5 (5.6)		0.40 (0.30)
19≤KW<37 (25≤HP<50)	2010 and earlier	9.5 (7.1)	5.5 (4.1)	0.80 (0.60)
	2011 +	7.5 (5.6)		0.30 (0.22)
37≤KW<56 (50≤HP<75)	2010 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2011 +[1]	4.7 (3.5)		0.40 (0.30)
56≤KW<75 (75≤HP<100)	2010 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2011 +[1]	4.7 (3.5)		0.40 (0.30)
75≤KW<130 (100≤HP<175)	2009 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2010 +[2]	4.0 (3.0)		0.30 (0.22)
130≤KW<225 (175≤HP<300)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009 +[3]	4.0 (3.0)		0.20 (0.15)
225≤KW<450 (300≤HP<600)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009 +[3]	4.0 (3.0)		0.20 (0.15)
450≤KW≤560 (600≤HP≤750)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009 +	4.0 (3.0)		0.20 (0.15)
KW>560 (HP>750)	2007 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2008 +	6.4 (4.8)		0.20 (0.15)

[1]For model years 2011-2013, manufacturers, owners and operators of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 revolutions per minute (rpm) may comply with the emission limitations for 2010 model year engines.

[2]For model years 2010-2012, manufacturers, owners and operators of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2009 model year engines.

[3]In model years 2009-2011, manufacturers of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2008 model year engines.

Table 5 to Subpart IIII of Part 60—Labeling and Recordkeeping Requirements for New Stationary Emergency Engines

[You must comply with the labeling requirements in §60.4210(f) and the recordkeeping requirements in §60.4214(b) for new emergency stationary CI ICE beginning in the following model years:]

Engine power	Starting model year
19≤KW<56 (25≤HP<75)	2013
56≤KW<130 (75≤HP<175)	2012
KW≥130 (HP≥175)	2011

Table 6 to Subpart IIII of Part 60—Optional 3-Mode Test Cycle for Stationary Fire Pump Engines

[As stated in §60.4210(g), manufacturers of fire pump engines may use the following test cycle for testing fire pump engines:]

Mode No.	Engine speed[1]	Torque (percent)[2]	Weighting factors
1	Rated	100	0.30
2	Rated	75	0.50
3	Rated	50	0.20

[1]Engine speed: ±2 percent of point.

[2]Torque: NFPA certified nameplate HP for 100 percent point. All points should be ±2 percent of engine percent load value.

Table 7 to Subpart IIII of Part 60—Requirements for Performance Tests for Stationary CI ICE With a Displacement of ≥30 Liters per Cylinder

As stated in §60.4213, you must comply with the following requirements for performance tests for stationary CI ICE with a displacement of ≥30 liters per cylinder:

Each	Complying with the requirement to	You must	Using	According to the following requirements
1. Stationary CI internal combustion engine with a displacement of	a. Reduce NO_X emissions by 90 percent or more;	i. Select the sampling port location and number/location of traverse points at the inlet and outlet of the control device;		(a) For NO_X, O_2, and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in diameter may be

Each	Complying with the requirement to	You must	Using	According to the following requirements
≥ 30 liters per cylinder				sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line ('3-point long line'). If the duct is >12 inches in diameter and the sampling port location meets the two and half-diameter criterion of Section 11.1.1 of Method 1 of 40 CFR part 60, appendix A-1, the duct may be sampled at '3-point long line'; otherwise, conduct the stratification testing and select sampling points according to Section 8.1.2 of Method 7E of 40 CFR part 60, appendix A-4.
		ii. Measure O_2 at the inlet and outlet of the control device;	(1) Method 3, 3A, or 3B of 40 CFR part 60, appendix A-2	(b) Measurements to determine O_2 concentration must be made at the same time as the measurements for NO_X concentration.
		iii. If necessary, measure moisture content at the inlet and outlet of the control device; and	(2) Method 4 of 40 CFR part 60, appendix A-3, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see §60.17)	(c) Measurements to determine moisture content must be made at the same time as the measurements for NO_X concentration.
		iv. Measure NO_X at the inlet and outlet of the control device.	(3) Method 7E of 40 CFR part 60, appendix A-4, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see §60.17)	(d) NO_X concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

Each	Complying with the requirement to	You must	Using	According to the following requirements
	b. Limit the concentration of NO_x in the stationary CI internal combustion engine exhaust.	i. Select the sampling port location and number/location of traverse points at the exhaust of the stationary internal combustion engine;		(a) For NO_x, O_2, and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line ('3-point long line'). If the duct is >12 inches in diameter and the sampling port location meets the two and half-diameter criterion of Section 11.1.1 of Method 1 of 40 CFR part 60, appendix A-1, the duct may be sampled at '3-point long line'; otherwise, conduct the stratification testing and select sampling points according to Section 8.1.2 of Method 7E of 40 CFR part 60, appendix A-4.
		ii. Determine the O_2 concentration of the stationary internal combustion engine exhaust at the sampling port location;	(1) Method 3, 3A, or 3B of 40 CFR part 60, appendix A-2	(b) Measurements to determine O_2 concentration must be made at the same time as the measurement for NO_x concentration.
		iii. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and	(2) Method 4 of 40 CFR part 60, appendix A-3, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see §60.17)	(c) Measurements to determine moisture content must be made at the same time as the measurement for NO_x concentration.
		iv. Measure NO_x at the exhaust of the stationary internal combustion engine; if using a control device, the sampling site	(3) Method 7E of 40 CFR part 60, appendix A-4, Method 320 of 40 CFR part 63,	(d) NO_x concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average

Each	Complying with the requirement to	You must	Using	According to the following requirements
		must be located at the outlet of the control device.	appendix A, or ASTM D 6348-03 (incorporated by reference, see §60.17)	of the three 1-hour or longer runs.
	c. Reduce PM emissions by 60 percent or more	i. Select the sampling port location and the number of traverse points;	(1) Method 1 or 1A of 40 CFR part 60, appendix A-1	(a) Sampling sites must be located at the inlet and outlet of the control device.
		ii. Measure O_2 at the inlet and outlet of the control device;	(2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A-2	(b) Measurements to determine O_2 concentration must be made at the same time as the measurements for PM concentration.
		iii. If necessary, measure moisture content at the inlet and outlet of the control device; and	(3) Method 4 of 40 CFR part 60, appendix A-3	(c) Measurements to determine and moisture content must be made at the same time as the measurements for PM concentration.
		iv. Measure PM at the inlet and outlet of the control device.	(4) Method 5 of 40 CFR part 60, appendix A-3	(d) PM concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
	d. Limit the concentration of PM in the stationary CI internal combustion engine exhaust	i. Select the sampling port location and the number of traverse points;	(1) Method 1 or 1A of 40 CFR part 60, appendix A-1	(a) If using a control device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O_2 concentration of the stationary internal combustion engine exhaust at the sampling port location;	(2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A-2	(b) Measurements to determine O_2 concentration must be made at the same time as the measurements for PM concentration.

Each	Complying with the requirement to	You must	Using	According to the following requirements
		iii. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and	(3) Method 4 of 40 CFR part 60, appendix A-3	(c) Measurements to determine moisture content must be made at the same time as the measurements for PM concentration.
		iv. Measure PM at the exhaust of the stationary internal combustion engine.	(4) Method 5 of 40 CFR part 60, appendix A-3	(d) PM concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

Table 8 to Subpart IIII of Part 60—Applicability of General Provisions to Subpart IIII

[As stated in §60.4218, you must comply with the following applicable General Provisions:]

General Provisions citation	Subject of citation	Applies to subpart	Explanation
§60.1	General applicability of the General Provisions	Yes	
§60.2	Definitions	Yes	Additional terms defined in §60.4219.
§60.3	Units and abbreviations	Yes	
§60.4	Address	Yes	
§60.5	Determination of construction or modification	Yes	
§60.6	Review of plans	Yes	
§60.7	Notification and Recordkeeping	Yes	Except that §60.7 only applies as specified in §60.4214(a).
§60.8	Performance tests	Yes	Except that §60.8 only applies to stationary CI ICE with a displacement of (≥30 liters per cylinder and engines that are not certified.
§60.9	Availability of information	Yes	
§60.10	State Authority	Yes	

General Provisions citation	Subject of citation	Applies to subpart	Explanation
§60.11	Compliance with standards and maintenance requirements	No	Requirements are specified in subpart IIII.
§60.12	Circumvention	Yes	
§60.13	Monitoring requirements	Yes	Except that §60.13 only applies to stationary CI ICE with a displacement of (≥30 liters per cylinder.
§60.14	Modification	Yes	
§60.15	Reconstruction	Yes	
§60.16	Priority list	Yes	
§60.17	Incorporations by reference	Yes	
§60.18	General control device requirements	No	
§60.19	General notification and reporting requirements	Yes	

Appendix K. 40 CFR pt. 60, subp. A – General Provisions

§60.1 Applicability.

(a) Except as provided in subparts B and C, the provisions of this part apply to the owner or operator of any stationary source which contains an affected facility, the construction or modification of which is commenced after the date of publication in this part of any standard (or, if earlier, the date of publication of any proposed standard) applicable to that facility.

(b) Any new or revised standard of performance promulgated pursuant to section 111(b) of the Act shall apply to the owner or operator of any stationary source which contains an affected facility, the construction or modification of which is commenced after the date of publication in this part of such new or revised standard (or, if earlier, the date of publication of any proposed standard) applicable to that facility.

(c) In addition to complying with the provisions of this part, the owner or operator of an affected facility may be required to obtain an operating permit issued to stationary sources by an authorized State air pollution control agency or by the Administrator of the U.S. Environmental Protection Agency (EPA) pursuant to Title V of the Clean Air Act (Act) as amended November 15, 1990 (42 U.S.C. 7661). For more information about obtaining an operating permit see part 70 of this chapter.

(d) Site-specific standard for Merck & Co., Inc.'s Stonewall Plant in Elkton, Virginia.

(1) This paragraph applies only to the pharmaceutical manufacturing facility, commonly referred to as the Stonewall Plant, located at Route 340 South, in Elkton, Virginia ("site").

(2) Except for compliance with 40 CFR 60.49b(u), the site shall have the option of either complying directly with the requirements of this part, or reducing the site-wide emissions caps in accordance with the procedures set forth in a permit issued pursuant to 40 CFR 52.2454. If the site chooses the option of reducing the site-wide emissions caps in accordance with the procedures set forth in such permit, the requirements of such permit shall apply in lieu of the otherwise applicable requirements of this part.

(3) Notwithstanding the provisions of paragraph (d)(2) of this section, for any provisions of this part except for Subpart Kb, the owner/operator of the site shall comply with the applicable provisions of this part if the Administrator determines that compliance with the provisions of this part is necessary for achieving the objectives of the regulation and the Administrator notifies the site in accordance with the provisions of the permit issued pursuant to 40 CFR 52.2454.

§60.2 Definitions.

The terms used in this part are defined in the Act or in this section as follows:

Act means the Clean Air Act (42 U.S.C. 7401 *et seq.*)

Administrator means the Administrator of the Environmental Protection Agency or his authorized representative.

Affected facility means, with reference to a stationary source, any apparatus to which a standard is applicable.

Alternative method means any method of sampling and analyzing for an air pollutant which is not a reference or equivalent method but which has been demonstrated to the Administrator's satisfaction to, in specific cases, produce results adequate for his determination of compliance.

Approved permit program means a State permit program approved by the Administrator as meeting the requirements of part 70 of this chapter or a Federal permit program established in this chapter pursuant to Title V of the Act (42 U.S.C. 7661).

Capital expenditure means an expenditure for a physical or operational change to an existing facility which exceeds the product of the applicable "annual asset guideline repair allowance percentage" specified in the latest edition of

Internal Revenue Service (IRS) Publication 534 and the existing facility's basis, as defined by section 1012 of the Internal Revenue Code. However, the total expenditure for a physical or operational change to an existing facility must not be reduced by any "excluded additions" as defined in IRS Publication 534, as would be done for tax purposes.

Clean coal technology demonstration project means a project using funds appropriated under the heading 'Department of Energy-Clean Coal Technology', up to a total amount of $2,500,000,000 for commercial demonstrations of clean coal technology, or similar projects funded through appropriations for the Environmental Protection Agency.

Commenced means, with respect to the definition of *new source* in section 111(a)(2) of the Act, that an owner or operator has undertaken a continuous program of construction or modification or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification.

Construction means fabrication, erection, or installation of an affected facility.

Continuous monitoring system means the total equipment, required under the emission monitoring sections in applicable subparts, used to sample and condition (if applicable), to analyze, and to provide a permanent record of emissions or process parameters.

Electric utility steam generating unit means any steam electric generating unit that is constructed for the purpose of supplying more than one-third of its potential electric output capacity and more than 25 MW electrical output to any utility power distribution system for sale. Any steam supplied to a steam distribution system for the purpose of providing steam to a steam-electric generator that would produce electrical energy for sale is also considered in determining the electrical energy output capacity of the affected facility.

Equivalent method means any method of sampling and analyzing for an air pollutant which has been demonstrated to the Administrator's satisfaction to have a consistent and quantitatively known relationship to the reference method, under specified conditions.

Excess Emissions and Monitoring Systems Performance Report is a report that must be submitted periodically by a source in order to provide data on its compliance with stated emission limits and operating parameters, and on the performance of its monitoring systems.

Existing facility means, with reference to a stationary source, any apparatus of the type for which a standard is promulgated in this part, and the construction or modification of which was commenced before the date of proposal of that standard; or any apparatus which could be altered in such a way as to be of that type.

Force majeure means, for purposes of §60.8, an event that will be or has been caused by circumstances beyond the control of the affected facility, its contractors, or any entity controlled by the affected facility that prevents the owner or operator from complying with the regulatory requirement to conduct performance tests within the specified timeframe despite the affected facility's best efforts to fulfill the obligation. Examples of such events are acts of nature, acts of war or terrorism, or equipment failure or safety hazard beyond the control of the affected facility.

Isokinetic sampling means sampling in which the linear velocity of the gas entering the sampling nozzle is equal to that of the undisturbed gas stream at the sample point.

Issuance of a part 70 permit will occur, if the State is the permitting authority, in accordance with the requirements of part 70 of this chapter and the applicable, approved State permit program. When the EPA is the permitting authority, issuance of a Title V permit occurs immediately after the EPA takes final action on the final permit.

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

Modification means any physical change in, or change in the method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted.

Monitoring device means the total equipment, required under the monitoring of operations sections in applicable subparts, used to measure and record (if applicable) process parameters.

Nitrogen oxides means all oxides of nitrogen except nitrous oxide, as measured by test methods set forth in this part.

One-hour period means any 60-minute period commencing on the hour.

Opacity means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.

Owner or operator means any person who owns, leases, operates, controls, or supervises an affected facility or a stationary source of which an affected facility is a part.

Part 70 permit means any permit issued, renewed, or revised pursuant to part 70 of this chapter.

Particulate matter means any finely divided solid or liquid material, other than uncombined water, as measured by the reference methods specified under each applicable subpart, or an equivalent or alternative method.

Permit program means a comprehensive State operating permit system established pursuant to title V of the Act (42 U.S.C. 7661) and regulations codified in part 70 of this chapter and applicable State regulations, or a comprehensive Federal operating permit system established pursuant to title V of the Act and regulations codified in this chapter.

Permitting authority means:

(1) The State air pollution control agency, local agency, other State agency, or other agency authorized by the Administrator to carry out a permit program under part 70 of this chapter; or

(2) The Administrator, in the case of EPA-implemented permit programs under title V of the Act (42 U.S.C. 7661).

Proportional sampling means sampling at a rate that produces a constant ratio of sampling rate to stack gas flow rate.

Reactivation of a very clean coal-fired electric utility steam generating unit means any physical change or change in the method of operation associated with the commencement of commercial operations by a coal-fired utility unit after a period of discontinued operation where the unit:

(1) Has not been in operation for the two-year period prior to the enactment of the Clean Air Act Amendments of 1990, and the emissions from such unit continue to be carried in the permitting authority's emissions inventory at the time of enactment;

(2) Was equipped prior to shut-down with a continuous system of emissions control that achieves a removal efficiency for sulfur dioxide of no less than 85 percent and a removal efficiency for particulates of no less than 98 percent;

(3) Is equipped with low-NO_x burners prior to the time of commencement of operations following reactivation; and

(4) Is otherwise in compliance with the requirements of the Clean Air Act.

Reference method means any method of sampling and analyzing for an air pollutant as specified in the applicable subpart.

Repowering means replacement of an existing coal-fired boiler with one of the following clean coal technologies: atmospheric or pressurized fluidized bed combustion, integrated gasification combined cycle, magnetohydrodynamics, direct and indirect coal-fired turbines, integrated gasification fuel cells, or as determined by the Administrator, in consultation with the Secretary of Energy, a derivative of one or more of these technologies, and any other technology capable of controlling multiple combustion emissions simultaneously with improved boiler or generation efficiency and with significantly greater waste reduction relative to the performance of technology in widespread commercial use as of November 15, 1990. Repowering shall also include any oil and/or gas-fired unit which has been awarded clean coal technology demonstration funding as of January 1, 1991, by the Department of Energy.

Run means the net period of time during which an emission sample is collected. Unless otherwise specified, a run may be either intermittent or continuous within the limits of good engineering practice.

Shutdown means the cessation of operation of an affected facility for any purpose.

Six-minute period means any one of the 10 equal parts of a one-hour period.

Standard means a standard of performance proposed or promulgated under this part.

Standard conditions means a temperature of 293 K (68F) and a pressure of 101.3 kilopascals (29.92 in Hg).

Startup means the setting in operation of an affected facility for any purpose.

State means all non-Federal authorities, including local agencies, interstate associations, and State-wide programs, that have delegated authority to implement: (1) The provisions of this part; and/or (2) the permit program established under part 70 of this chapter. The term State shall have its conventional meaning where clear from the context.

Stationary source means any building, structure, facility, or installation which emits or may emit any air pollutant.

Title V permit means any permit issued, renewed, or revised pursuant to Federal or State regulations established to implement title V of the Act (42 U.S.C. 7661). A title V permit issued by a State permitting authority is called a part 70 permit in this part.

Volatile Organic Compound means any organic compound which participates in atmospheric photochemical reactions; or which is measured by a reference method, an equivalent method, an alternative method, or which is determined by procedures specified under any subpart.

§60.3 Units and abbreviations.

Used in this part are abbreviations and symbols of units of measure. These are defined as follows:

(a) System International (SI) units of measure:

A—ampere g—

gram Hz—hertz

J—joule K—

degree Kelvin

kg—kilogram

m—meter

m3—cubic meter mg—
milligram—10^{-3} gram mm—
millimeter—10^{-3} meter Mg—
megagram—106 gram mol—
mole
N—newton ng—nanogram—
10^{-9} gram nm—nanometer—
10^{-9} meter Pa—pascal
s—second
V—volt
W—watt
Ω—ohm
µg—microgram—10^{-6} gram

(b) Other units of measure:

Btu—British thermal unit
°C—degree Celsius (centigrade)
cal—calorie
cfm—cubic feet per minute
cu ft—cubic feet
dcf—dry cubic feet
dcm—dry cubic meter
dscf—dry cubic feet at standard conditions
dscm—dry cubic meter at standard conditions
eq—equivalent
°F—degree Fahrenheit
ft—feet
gal—gallon
gr—grain
g-eq—gram equivalent
hr—hour
in—inch
k—1,000

l—liter

lpm—liter per minute

lb—pound meq—

milliequivalent min—

minute ml—milliliter

mol. wt.—molecular weight

ppb—parts per billion ppm—

parts per million

psia—pounds per square inch absolute

psig—pounds per square inch gage

°R—degree Rankine

scf—cubic feet at standard conditions scfh—

cubic feet per hour at standard conditions

scm—cubic meter at standard conditions sec—

second

sq ft—square feet

std—at standard conditions

(c) Chemical nomenclature:

CdS—cadmium sulfide

CO—carbon monoxide

CO_2—carbon dioxide

HCl—hydrochloric acid

Hg—mercury H_2O—

water H_2S—hydrogen

sulfide H_2SO_4—sulfuric

acid N_2—nitrogen

NO—nitric oxide

NO_2—nitrogen dioxide

NO_X—nitrogen oxides

O_2—oxygen SO_2—

sulfur dioxide

SO_3—sulfur trioxide SO_X—

sulfur oxides

(d) Miscellaneous:

A.S.T.M.—American Society for Testing and Materials

§60.4 Address.

(a) All requests, reports, applications, submittals, and other communications to the Administrator pursuant to this part shall be submitted in duplicate to the appropriate Regional Office of the U.S. Environmental Protection Agency to the attention of the Director of the Division indicated in the following list of EPA Regional Offices.

Region I (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont), Director, Office of Ecosystem Protection, U.S. Environmental Protection Agency, 5 Post Office Square—Suite 100, Boston, MA 02109-3912.

Region II (New Jersey, New York, Puerto Rico, Virgin Islands), Director, Air and Waste Management Division, U.S. Environmental Protection Agency, Federal Office Building, 26 Federal Plaza (Foley Square), New York, NY 10278.

Region III (Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia), Director, Air Protection Division, Mail Code 3AP00, 1650 Arch Street, Philadelphia, PA 19103-2029.

Region IV (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee), Director, Air, Pesticides and Toxics Management Division, U.S. Environmental Protection Agency, 61 Forsyth St. SW., Suite 9T43, Atlanta, Georgia 30303-8960.

Region V (Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin), Director, Air and Radiation Division, U.S. Environmental Protection Agency, 77 West Jackson Boulevard, Chicago, IL 60604-3590.

Region VI (Arkansas, Louisiana, New Mexico, Oklahoma, Texas); Director; Air, Pesticides, and Toxics Division; U.S. Environmental Protection Agency, 1445 Ross Avenue, Dallas, TX 75202.

Region VII (Iowa, Kansas, Missouri, Nebraska), Director, Air and Waste Management Division, 11201 Renner Boulevard, Lenexa, Kansas 66219.

Region VIII (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming) Director, Air and Toxics Technical Enforcement Program, Office of Enforcement, Compliance and Environmental Justice, Mail Code 8ENF-AT, 1595 Wynkoop Street, Denver, CO 80202-1129.

Region IX (Arizona, California, Hawaii and Nevada; the territories of American Samoa and Guam; the Commonwealth of the Northern Mariana Islands; the territories of Baker Island, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Midway Atoll, Palmyra Atoll, and Wake Islands; and certain U.S. Government activities in the freely associated states of the Republic of the Marshall Islands, the Federated States of Micronesia, and the Republic of Palau), Director, Air Division, U.S. Environmental Protection Agency, 75 Hawthorne Street, San Francisco, CA 94105.

Region X (Alaska, Oregon, Idaho, Washington), Director, Air and Waste Management Division, U.S. Environmental Protection Agency, 1200 Sixth Avenue, Seattle, WA 98101.

(b) Section 111(c) directs the Administrator to delegate to each State, when appropriate, the authority to implement and enforce standards of performance for new stationary sources located in such State. All information required to be submitted to EPA under paragraph (a) of this section, must also be submitted to the appropriate State Agency of any State to which this authority has been delegated (provided, that each specific delegation may except sources from a certain Federal or State reporting requirement). The appropriate mailing address for those States whose delegation request has been approved is as follows:

(1) [Reserved]

(2) State of Alabama: Alabama Department of Environmental Management, P.O. Box 301463, Montgomery, Alabama 36130-1463.

(3) State of Alaska, Department of Environmental Conservation, Pouch O, Juneau, AK 99811.

(4) Arizona:

Arizona Department of Environmental Quality, 1110 West Washington Street, Phoenix, AZ 85007.

Maricopa County Air Quality Department, 1001 North Central Avenue, Suite 900, Phoenix, AZ 85004.

Pima County Department of Environmental Quality, 33 North Stone Avenue, Suite 700, Tucson, AZ 85701.

Pinal County Air Quality Control District, 31 North Pinal Street, Building F, Florence, AZ 85132.

NOTE: For tables listing the delegation status of agencies in Region IX, see paragraph (d) of this section.

(5) State of Arkansas: Chief, Division of Air Pollution Control, Arkansas Department of Pollution Control and Ecology, 8001 National Drive, P.O. Box 9583, Little Rock, AR 72209.

(6) California:

Amador County Air Pollution Control District, 12200-B Airport Road, Jackson, CA 95642.

Antelope Valley Air Quality Management District, 43301 Division Street, Suite 206, Lancaster, CA 93535.

Bay Area Air Quality Management District, 939 Ellis Street, San Francisco, CA 94109.

Butte County Air Quality Management District, 2525 Dominic Drive, Suite J, Chico, CA 95928.

Calaveras County Air Pollution Control District, 891 Mountain Ranch Road, San Andreas, CA 95249.

Colusa County Air Pollution Control District, 100 Sunrise Blvd., Suite A-3, Colusa, CA 95932-3246.

El Dorado County Air Quality Management District, 2850 Fairlane Court, Bldg. C, Placerville, CA 95667-4100.

Eastern Kern Air Pollution Control District, 2700 “M” Street, Suite 302, Bakersfield, CA 93301-2370.

Feather River Air Quality Management District, 1007 Live Oak Blvd., Suite B-3, Yuba City, CA 95991.

Glenn County Air Pollution Control District, 720 N. Colusa Street, P.O. Box 351, Willows, CA 95988-0351.

Great Basin Unified Air Pollution Control District, 157 Short Street, Suite 6, Bishop, CA 93514-3537.

Imperial County Air Pollution Control District, 150 South Ninth Street, El Centro, CA 92243-2801.

Lake County Air Quality Management District, 885 Lakeport Blvd., Lakeport, CA 95453-5405.

Lassen County Air Pollution Control District, 707 Nevada Street, Suite 1, Susanville, CA 96130.

Mariposa County Air Pollution Control District, P.O. Box 5, Mariposa, CA 95338.

Mendocino County Air Quality Management District, 306 E. Gobbi Street, Ukiah, CA 95482-5511.

Modoc County Air Pollution Control District, 619 North Main Street, Alturas, CA 96101.

Mojave Desert Air Quality Management District, 14306 Park Avenue, Victorville, CA 92392-2310.

Monterey Bay Unified Air Pollution Control District, 24580 Silver Cloud Court, Monterey, CA 93940.

North Coast Unified Air Quality Management District, 2300 Myrtle Avenue, Eureka, CA 95501-3327.

Northern Sierra Air Quality Management District, 200 Litton Drive, Suite 320, P.O. Box 2509, Grass Valley, CA 95945-2509.

Northern Sonoma County Air Pollution Control District, 150 Matheson Street, Healdsburg, CA 95448-4908.

Placer County Air Pollution Control District, 3091 County Center Drive, Suite 240, Auburn, CA 95603.

Sacramento Metropolitan Air Quality Management District, 777 12th Street, Third Floor, Sacramento, CA 95814-1908.

San Diego County Air Pollution Control District, 10124 Old Grove Road, San Diego, CA 92131-1649.

San Joaquin Valley Air Pollution Control District, 1990 E. Gettysburg, Fresno, CA 93726.

San Luis Obispo County Air Pollution Control District, 3433 Roberto Court, San Luis Obispo, CA 93401-7126.

Santa Barbara County Air Pollution Control District, 260 North San Antonio Road, Suite A, Santa Barbara, CA 93110-1315.

Shasta County Air Quality Management District, 1855 Placer Street, Suite 101, Redding, CA 96001-1759.

Siskiyou County Air Pollution Control District, 525 So. Foothill Drive, Yreka, CA 96097-3036.

South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, CA 91765-4182.

Tehama County Air Pollution Control District, P.O. Box 8069 (1750 Walnut Street), Red Bluff, CA 96080-0038.

Tuolumne County Air Pollution Control District, 22365 Airport, Columbia, CA 95310.

Ventura County Air Pollution Control District, 669 County Square Drive, 2nd Floor, Ventura, CA 93003-5417.

Yolo-Solano Air Quality Management District, 1947 Galileo Court, Suite 103, Davis, CA 95616-4882.

NOTE: For tables listing the delegation status of agencies in Region IX, see paragraph (d) of this section.

(7) State of Colorado, Department of Public Health and Environment, 4300 Cherry Creek Drive South, Denver, CO 80222-1530.

NOTE: For a table listing Region VIII's NSPS delegation status, see paragraph (c) of this section.

(8) State of Connecticut, Bureau of Air Management, Department of Environmental Protection, State Office Building, 165 Capitol Avenue, Hartford, CT 06106.

(9) State of Delaware, Department of Natural Resources & Environmental Control, 89 Kings Highway, P.O. Box 1401, Dover, Delaware 19903.

(10) District of Columbia, Department of Public Health, Air Quality Division, 51 N Street, NE., Washington, DC 20002.

(11) State of Florida: Florida Department of Environmental Protection, Division of Air Resources Management, 2600 Blair Stone Road, MS 5500, Tallahassee, Florida 32399-2400.

(12) State of Georgia: Georgia Department of Natural Resources, Environmental Protection Division, Air Protection Branch, 4244 International Parkway, Suite 120, Atlanta, Georgia 30354.

(13) Hawaii:

Clean Air Branch, Hawaii Department of Health, 919 Ala Moana Blvd., Suite 203, Honolulu, HI 96814.

NOTE: For tables listing the delegation status of agencies in Region IX, see paragraph (d) of this section.

(14) State of Idaho, Department of Health and Welfare, Statehouse, Boise, ID 83701.

(15) State of Illinois: Illinois Environmental Protection Agency, 1021 North Grand Avenue East, Springfield, Illinois 62794.

(16) State of Indiana: Indiana Department of Environmental Management, Office of Air Quality, 100 North Senate Avenue, Indianapolis, Indiana 46204.

(17) State of Iowa: Iowa Department of Natural Resources, Environmental Protection Division, Air Quality Bureau, 7900 Hickman Road, Suite 1, Urbandale, IA 50322.

(18) State of Kansas: Kansas Department of Health and Environment, Bureau of Air and Radiation, 1000 S.W. Jackson, Suite 310, Topeka, KS 66612-1366.

(19) Commonwealth of Kentucky: Kentucky Department for Environmental Protection, Division for Air Quality, 300 Sower Boulevard, 2nd Floor, Frankfort, Kentucky 40601 or local agency, Louisville Metro Air Pollution Control District, 701 W. Ormsby Ave., Suite 303, Louisville, Kentucky 40203.

(20) State of Louisiana: Louisiana Department of Environmental Quality, P.O. Box 4301, Baton Rouge, Louisiana 70821-4301.

NOTE: For a list of delegated standards for Louisiana (excluding Indian country), see paragraph (e)(2) of this section.

(21) State of Maine, Bureau of Air Quality Control, Department of Environmental Protection, State House, Station No. 17, Augusta, ME 04333.

(22) State of Maryland, Department of the Environment, 1800 Washington Boulevard, Suite 705, Baltimore, Maryland 21230.

(23) Commonwealth of Massachusetts, Division of Air Quality Control, Department of Environmental Protection, One Winter Street, 7th floor, Boston, MA 02108.

(24) State of Michigan: Michigan Department of Natural Resources and Environment, Air Quality Division, P.O. Box 30028, Lansing, Michigan 48909.

(25) State of Minnesota: Minnesota Pollution Control Agency, Division of Air Quality, 520 Lafayette Road North, St. Paul, Minnesota 55155.

(26) State of Mississippi: Hand Deliver or Courier: Mississippi Department of Environmental Quality, Office of Pollution Control, Air Division, 515 East Amite Street, Jackson, Mississippi 39201, Mailing Address: Mississippi Department of Environmental Quality, Office of Pollution Control, Air Division, P.O. Box 2261, Jackson, Mississippi 39225.

(27) State of Missouri: Missouri Department of Natural Resources, Division of Environmental Quality, P.O. Box 176, Jefferson City, MO 65102.

(28) State of Montana, Department of Environmental Quality, 1520 E. 6th Ave., PO Box 200901, Helena, MT 59620-0901.

NOTE: For a table listing Region VIII's NSPS delegation status, see paragraph (c) of this section.

(29) State of Nebraska, Nebraska Department of Environmental Control, P.O. Box 94877, State House Station, Lincoln, NE 68509.

Lincoln-Lancaster County Health Department, Division of Environmental Health, 2200 St. Marys Avenue, Lincoln, NE 68502

(30) Nevada:

Nevada Division of Environmental Protection, 901 South Stewart Street, Suite 4001, Carson City, NV 89701-5249.

Clark County Department of Air Quality and Environmental Management, 500 S. Grand Central Parkway, 1st Floor, P.O. Box 555210, Las Vegas, NV 89155-5210.

Washoe County Health District, Air Quality Management Division, 1001 E. 9th Street, Building A, Suite 115A, Reno, NV 89520.

NOTE: For tables listing the delegation status of agencies in Region IX, see paragraph (d) of this section.

(31) State of New Hampshire, Air Resources Division, Department of Environmental Services, 64 North Main Street, Caller Box 2033, Concord, NH 03302-2033.

(32) State of New Jersey: New Jersey Department of Environmental Protection, Division of Environmental Quality, Enforcement Element, John Fitch Plaza, CN-027, Trenton, NJ 08625.

(1) The following table lists the specific source and pollutant categories that have been delegated to the states in Region II. The (X) symbol is used to indicate each category that has been delegated.

	Subpart	State			
		New Jersey	New York	Puerto Rico	Virgin Islands
D	Fossil-Fuel Fired Steam Generators for Which Construction Commenced After August 17, 1971 (Steam Generators and Lignite Fired Steam Generators)	X	X	X	X
Da	Electric Utility Steam Generating Units for Which Construction Commenced After September 18, 1978	X		X	
Db	Industrial-Commercial-Institutional Steam Generating Units	X	X	X	X
E	Incinerators	X	X	X	X
F	Portland Cement Plants	X	X	X	X
G	Nitric Acid Plants	X	X	X	X
H	Sulfuric Acid Plants	X	X	X	X
I	Asphalt Concrete Plants	X	X	X	X
J	Petroleum Refineries—(All Categories)	X	X	X	X
K	Storage Vessels for Petroleum Liquids Constructed After June 11, 1973, and prior to May 19, 1978	X	X	X	X

Ka	Storage Vessels for Petroleum Liquids Constructed After May 18, 1978	X	X	X	
L	Secondary Lead Smelters	X	X	X	X
M	Secondary Brass and Bronze Ingot Production Plants	X	X	X	X
N	Iron and Steel Plants	X	X	X	X
O	Sewage Treatment Plants	X	X	X	X
P	Primary Copper Smelters	X	X	X	X
Q	Primary Zinc Smelters	X	X	X	X
R	Primary Lead Smelters	X	X	X	X
S	Primary Aluminum Reduction Plants	X	X	X	X
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	X	X	X	X
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	X	X	X	X
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	X	X	X	X
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	X	X	X	X
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate	X	X	X	X
Y	Coal Preparation Plants	X	X	X	X
Z	Ferroally Production Facilities	X	X	X	X
AA	Steel Plants: Electric Arc Furnaces	X	X	X	X
AAa	Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels in Steel Plants	X	X	X	
BB	Kraft Pulp Mills	X	X	X	
CC	Glass Manufacturing Plants	X	X	X	
DD	Grain Elevators	X	X	X	
EE	Surface Coating of Metal Furniture	X	X	X	
GG	Stationary Gas Turbines	X	X	X	
HH	Lime Plants	X	X	X	
KK	Lead Acid Battery Manufacturing Plants	X	X		
LL	Metallic Mineral Processing Plants	X	X	X	
MM	Automobile and Light-Duty Truck Surface Coating Operations	X	X		
NN	Phosphate Rock Plants	X	X		
PP	Ammonium Sulfate Manufacturing Plants	X	X		

QQ	Graphic Art Industry Publication Rotogravure Printing	X	X	X	X
RR	Pressure Sensitive Tape and Label Surface Coating Operations	X	X	X	
SS	Industrial Surface Coating: Large Appliances	X	X	X	
TT	Metal Coil Surface Coating	X	X	X	
UU	Asphalt Processing and Asphalt Roofing Manufacture	X	X	X	
VV	Equipment Leaks of Volatile Organic Compounds in Synthetic Organic Chemical Manufacturing Industry	X		X	
WW	Beverage Can Surface Coating Industry	X	X	X	
XX	Bulk Gasoline Terminals	X	X	X	
FFF	Flexible Vinyl and Urethane Coating and Printing	X	X	X	
GGG	Equipment Leaks of VOC in Petroleum Refineries	X		X	
HHH	Synthetic Fiber Production Facilities	X		X	
JJJ	Petroleum Dry Clearners	X	X	X	
KKK	Equipment Leaks of VOC from Onshore Natural Gas Processing Plants				
LLL	Onshore Natural Gas Processing Plants; SO_2 Emissions		X		
OOO	Nonmetallic Mineral Processing Plants		X	X	
PPP	Wool Fiberglass Insulation Manufacturing Plants		X	X	

(33) State of New Mexico: New Mexico Environment Department, P.O. Box 5469, Santa Fe, New Mexico 87502-5469. Note: For a list of delegated standards for New Mexico (excluding Bernalillo County and Indian country), see paragraph (e)(1) of this section.

(i) Albuquerque-Bernalillo County Air Quality Control Board, c/o Environmental Health Department, P.O. Box 1293, Albuquerque, New Mexico 87103.

(ii) [Reserved]

(34) New York: New York State Department of Environmental Conservation, 50 Wolf Road Albany, New York 12233, attention: Division of Air Resources.

(35) State of North Carolina: North Carolina Department of Environmental Quality, Division of Air Quality, 1641 Mail Service Center, Raleigh, North Carolina 27699-1641 or local agencies, Forsyth County Office of Environmental Assistance and Protection, 201 North Chestnut Street, Winston-Salem, North Carolina 27101-4120; Mecklenburg County Land Use and Environmental Services Agency, Air Quality, 2145 Suttle Avenue, Charlotte, North Carolina 28208; Western North Carolina Regional Air Quality Agency, 125 S. Lexington Ave., Suite 101, Asheville, North Carolina 28801-3661.

(36) State of North Dakota, Division of Air Quality, North Dakota Department of Health, P.O. Box 5520, Bismarck, ND 58506-5520.

NOTE: For a table listing Region VIII's NSPS delegation status, see paragraph (c) of this section.

(37) State of Ohio:

(i) Medina, Summit and Portage Counties; Director, Akron Regional Air Quality Management District, 146 South High Street, Room 904, Akron, OH 44308.

(ii) Stark County; Director, Canton City Health Department, Air Pollution Control Division, 420 Market Avenue North, Canton, Ohio 44702-1544.

(iii) Butler, Clermont, Hamilton, and Warren Counties; Director, Hamilton County Department of Environmental Services, 250 William Howard Taft Road, Cincinnati, Ohio 45219-2660.

(iv) Cuyahoga County; Commissioner, Cleveland Department of Public Health, Division of Air Quality, 75 Erieview Plaza 2nd Floor, Cleveland, Ohio 44114.

(v) Clark, Darke, Greene, Miami, Montgomery, and Preble Counties; Director, Regional Air Pollution Control Agency, 117 South Main Street, Dayton, Ohio 45422-1280.

(vi) Lucas County and the City of Rossford (in Wood County); Director, City of Toledo, Division of Environmental Services, 348 South Erie Street, Toledo, OH 43604.

(vii) Adams, Brown, Lawrence, and Scioto Counties; Portsmouth Local Air Agency, 605 Washington Street, Third Floor, Portsmouth, OH 45662.

(viii) Allen, Ashland, Auglaize, Crawford, Defiance, Erie, Fulton, Hancock, Hardin, Henry, Huron, Marion, Mercer, Ottawa, Paulding, Putnam, Richland, Sandusky, Seneca, Van Wert Williams, Wood (Except City of Rossford), and Wyandot Counties; Ohio Environmental Protection Agency, Northwest District Office, Air Pollution Control, 347 North Dunbridge Road, Bowling Green, Ohio 43402.

(ix) Ashtabula, Caroll, Colombiana, Holmes, Lorain, and Wayne Counties; Ohio Environmental Protection Agency, Northeast District Office, Air Pollution Unit, 2110 East Aurora Road, Twinsburg, OH 44087.

(x) Athens, Belmont, Coshocton, Gallia, Guemsey, Harrison, Hocking, Jackson, Jefferson, Meigs, Monroe, Morgan, Muskingum, Noble, Perry, Pike, Ross, Tuscarawas, Vinton, and Washington Counties; Ohio Environmental Protection Agency, Southeast District Office, Air Pollution Unit, 2195 Front Street, Logan, OH 43138.

(xi) Champaign, Clinton, Highland, Logan, and Shelby Counties; Ohio Environmental Protection Agency, Southwest District Office, Air Pollution Unit, 401 East Fifth Street, Dayton, Ohio 45402-2911.

(xii) Delaware, Fairfield, Fayette, Franklin, Knox, Licking, Madison, Morrow, Pickaway, and Union Counties; Ohio Environmental Protection Agency, Central District Office, Air Pollution control, 50 West Town Street, Suite 700, Columbus, Ohio 43215.

(xiii) Geauga and Lake Counties; Lake County General Health District, Air Pollution Control, 33 Mill Street, Painesville, OH 44077.

(xiv) Mahoning and Trumbull Counties; Mahoning-Trumbull Air Pollution Control Agency, 345 Oak Hill Avenue, Suite 200, Youngstown, OH 44502.

(38) State of Oklahoma, Oklahoma State Department of Health, Air Quality Service, P.O. Box 53551, Oklahoma City, OK 73152.

(i) Oklahoma City and County: Director, Oklahoma City-County Health Department, 921 Northeast 23rd Street, Oklahoma City, OK 73105.

(ii) Tulsa County: Tulsa City-County Health Department, 4616 East Fifteenth Street, Tulsa, OK 74112.

(39) State of Oregon. (i) Oregon Department of Environmental Quality (ODEQ), 811 SW Sixth Avenue, Portland, OR 97204-1390, *http://www.deq.state.or.us.*

(ii) Lane Regional Air Pollution Authority (LRAPA), 1010 Main Street, Springfield, Oregon 97477, *http://www.lrapa.org.*

(40)(i) City of Philadelphia, Department of Public Health, Air Management Services, 321 University Avenue, Philadelphia, Pennsylvania 19104.

(ii) Commonwealth of Pennsylvania, Department of Environmental Protection, Bureau of Air Quality Control, P.O. Box 8468, 400 Market Street, Harrisburg, Pennsylvania 17105.

(iii) Allegheny County Health Department, Bureau of Environmental Quality, Division of Air Quality, 301 39th Street, Pittsburgh, Pennsylvania 15201.

(41) State of Rhode Island, Division of Air and Hazardous Materials, Department of Environmental Management, 291 Promenade Street, Providence, RI 02908.

(42) State of South Carolina: South Carolina Department of Health and Environmental Control, 2600 Bull Street, Columbia, South Carolina 29201.

(43) State of South Dakota, Air Quality Program, Department of Environment and Natural Resources, Joe Foss Building, 523 East Capitol, Pierre, SD 57501-3181.

NOTE: For a table listing Region VIII's NSPS delegation status, see paragragh (c) of this section.

(44) State of Tennessee: Tennessee Department of Environment and Conservation, Division of Air Pollution Control, William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 15th Floor, Nashville, Tennessee 37243, or local agencies, Knox County Air Quality Management—Department of Public Health, 140 Dameron Avenue, Knoxville, Tennessee 37917; Metro Public Health Department, Pollution Control Division, 2500 Charlotte Ave., Nashville, Tennessee 37209; Chattanooga-Hamilton County Air Pollution Control Bureau, 6125 Preservation Drive, Chattanooga, Tennessee 37416; Shelby County Health Department, Pollution Control Section, 814 Jefferson Avenue, Memphis, Tennessee 38105.

(45) State of Texas, Texas Air Control Board, 6330 Highway 290 East, Austin, TX 78723.

(46) State of Utah, Division of Air Quality, Department of Environmental Quality, P.O. Box 144820, Salt Lake City, UT 84114-4820.

NOTE: For a table listing Region VIII's NSPS delegation status, see paragraph (c) of this section.

(47) State of Vermont, Air Pollution Control Division, Agency of Natural Resources, Building 3 South, 103 South Main Street, Waterbury, VT 05676.

(48) Commonwealth of Virginia, Department of Environmental Quality, 629 East Main Street, Richmond, Virginia 23219.

(49) State of Washington.

(i) Washington State Department of Ecology (Ecology), P.O. Box 47600, Olympia, WA 98504-7600, *http://www.ecy.wa.gov/*

(ii) Benton Clean Air Authority (BCAA), 650 George Washington Way, Richland, WA 99352-4289, *http://www.bcaa.net/*

(iii) Northwest Air Pollution Control Authority (NWAPA), 1600 South Second St., Mount Vernon, WA 98273-5202, *http://www.nwair.org/*

(iv) Olympic Regional Clean Air Agency (ORCAA), 909 Sleater-Kinney Road S.E., Suite 1, Lacey, WA 98503-1128, *http://www.orcaa.org/*

(v) Puget Sound Clean Air Agency (PSCAA), 110 Union Street, Suite 500, Seattle, WA 98101-2038, *http://www.pscleanair.org/*

(vi) Spokane County Air Pollution Control Authority (SCAPCA), West 1101 College, Suite 403, Spokane, WA 99201, *http://www.scapca.org/*

(vii) Southwest Clean Air Agency (SWCAA), 1308 NE. 134th St., Vancouver, WA 98685-2747, *http://www.swcleanair.org/*

(viii) Yakima Regional Clean Air Authority (YRCAA), 6 South 2nd Street, Suite 1016, Yakima, WA 98901, *http://co.yakima.wa.us/cleanair/default.htm*

(ix) The following table lists the delegation status of the New Source Performance Standards for the State of Washington. An "X" indicates the subpart has been delegated, subject to all the conditions and limitations set forth in Federal law and the letters granting delegation. Some authorities cannot be delegated and are retained by EPA. Refer to the letters granting delegation for a discussion of these retained authorities. The dates noted at the end of the table indicate the effective dates of Federal rules that have been delegated. Authority for implementing and enforcing any amendments made to these rules after these effective dates are not delegated.

NSPS Subparts Delegated to Washington Air Agencies

Subpart[1]	Washington							
	Ecology[2]	BCAA[3]	NWAPA[4]	ORCAA[5]	PSCAA[6]	SCAPCA[7]	SWCAA[8]	YRCAA[9]
A General Provisions	X	X	X	X	X	X	X	X
B Adoption and Submittal of State Plans for Designated Facilities								
C Emission Guidelines and Compliance Times								
Cb Large Municipal Waste Combustors that are Constructed on or before September 20, 1994 (Emission Guidelines and Compliance Times)								
Cc Municipal Solid Waste Landfills (Emission Guidelines and Compliance Times) Cd Sulfuric Acid Production Units (Emission Guidelines and Compliance Times)								
Ce Hospital/Medical/Infectious Waste Incinerators (Emission Guidelines and Compliance Times)								
D Fossil-Fuel-Fired Steam Generators for which Construction is Commenced after August 17, 1971	X	X	X	X	X	X	X	X
Da Electric Utility Steam Generating Units for which Construction is Commenced after September 18, 1978	X	X	X	X	X	X	X	X

Db Industrial-Commercial-Institutional Steam Generating Units	X	X	X	X	X	X	X	X
Dc Small Industrial-Commercial-Institutional Steam Generating Units	X	X	X	X	X	X	X	X
E Incinerators	X	X	X	X	X	X	X	X
Ea Municipal Waste Combustors for which Construction is Commenced after December 20, 1989 and on or before September 20, 1994	X	X	X	X	X	X	X	X
Eb—Large Municipal Waste Combustors		X		X	X	X		
Ec—Hospital/Medical/Infectious Waste Incinerators	X	X	X	X	X	X		
F Portland Cement Plants	X	X	X	X	X	X	X	X
G Nitric Acid Plants	X	X	X	X	X	X	X	X
H Sulfuric Acid Plants	X	X	X	X	X	X	X	X
I Hot Mix Asphalt Facilities	X	X	X	X	X	X	X	X
J Petroleum Refineries	X	X	X	X	X	X	X	X
K Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced after June 11, 1973 and prior to May 19, 1978	X	X	X	X	X	X	X	X
Ka Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced after May 18, 1978 and prior to July 23, 1984	X	X	X	X	X	X	X	X
Kb VOC Liquid Storage Vessels (including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction, or Modification Commenced after July 23, 1984	X	X	X	X	X	X	X	X
L Secondary Lead Smelters	X	X	X	X	X	X	X	X
M Secondary Brass and Bronze Production Plants	X	X	X	X	X	X	X	X
N Primary Emissions from Basic Oxygen Process Furnaces for which Construction is Commenced after June 11, 1973	X	X	X	X	X	X	X	X
Na Secondary Emissions from Basic Oxygen Process Steel-making Facilities for which Construction is Commenced after January 20, 1983	X	X	X	X	X	X	X	X
O Sewage Treatment Plants	X	X	X	X	X	X	X	X
P Primary Copper Smelters	X	X	X	X	X	X	X	X
Q Primary Zinc Smelters	X	X	X	X	X	X	X	X
R Primary Lead Smelters	X	X	X	X	X	X	X	X

S Primary Aluminum Reduction Plants[10]	X							
T Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	X	X	X	X	X	X	X	X
U Phosphate Fertilizer Industry: Superphosphoric Acid Plants	X	X	X	X	X	X	X	X
V Phosphate Fertilizer Industry: Diammonium Phosphate Plants	X	X	X	X	X	X	X	X
W Phosphate Fertilizer Industry: Triple Superphosphate Plants	X	X	X	X	X	X	X	X
X Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities	X	X	X	X	X	X	X	X
Y Coal Preparation Plants	X	X	X	X	X	X	X	X
Z Ferroalloy Production Facilities	X	X	X	X	X	X	X	X
AA Steel Plants: Electric Arc Furnaces Constructed after October 21, 1974 and on or before August 17, 1983	X	X	X	X	X	X	X	X
AAa Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed after August 7, 1983	X	X	X	X	X	X	X	X
BB Kraft Pulp Mills[11]	X							
CC Glass Manufacturing Plants	X	X	X	X	X	X	X	X
DD Grain Elevators	X	X	X	X	X	X	X	X
EE Surface Coating of Metal Furniture	X	X	X	X	X	X	X	X
GG Stationary Gas Turbines	X	X	X	X	X	X	X	X
HH Lime Manufacturing Plants	X	X	X	X	X	X	X	X
KK Lead-Acid Battery Manufacturing Plants	X	X	X	X	X	X	X	X
LL Metallic Mineral Processing Plants	X	X	X	X	X	X	X	X
MM Automobile and Light Duty Truck Surface Coating Operations	X	X	X	X	X	X	X	X
NN Phosphate Rock Plants	X	X	X	X	X	X	X	X
PP Ammonium Sulfate Manufacture	X	X	X	X	X	X	X	X
QQ Graphic Arts Industry: Publication Rotogravure Printing	X	X	X	X	X	X	X	X
RR Pressure Sensitive Tape and Label Surface Coating Standards	X	X	X	X	X	X	X	X

SS Industrial Surface Coating: Large Appliances	X	X	X	X	X	X	X	X
TT Metal Coil Surface Coating	X	X	X	X	X	X	X	X
UU Asphalt Processing and Asphalt Roof Manufacture	X	X	X	X	X	X	X	X
VV Equipment Leaks of VOC in Synthetic Organic Chemical Manufacturing Industry	X	X	X	X	X	X	X	X
WW Beverage Can Surface Coating Industry	X	X	X	X	X	X	X	X
XX Bulk Gasoline Terminals	X	X	X	X	X	X	X	X
AAA New Residential Wood Heaters								
BBB Rubber Tire Manufacturing Industry	X	X	X	X	X	X	X	X
DDD VOC Emissions from Polymer Manufacturing Industry	X	X	X	X	X	X	X	X
FFF Flexible Vinyl and Urethane Coating and Printing	X	X	X	X	X	X	X	X
GGG Equipment Leaks of VOC in Petroleum Refineries	X	X	X	X	X	X	X	X
HHH Synthetic Fiber Production Facilities	X	X	X	X	X	X	X	X
III VOC Emissions from Synthetic Organic Chemical Manufacturing Industry Air Oxidation Unit Processes	X	X	X	X	X	X	X	X
JJJ Petroleum Dry Cleaners	X	X	X	X	X	X	X	X
KKK Equipment Leaks of VOC from Onshore Natural Gas Processing Plants	X	X	X	X	X	X	X	X
LLL Onshore Natural Gas Processing: SO_2 Emissions	X	X	X	X	X	X	X	X
NNN VOC Emissions from Synthetic Organic Chemical Manufacturing Industry Distillation Operations	X	X	X	X	X	X	X	X
OOO Nonmetallic Mineral Processing Plants			X		X		X	
PPP Wool Fiberglass Insulation Manufacturing Plants	X	X	X	X	X	X	X	X
QQQ VOC Emissions from Petroleum Refinery Wastewater Systems	X	X	X	X	X	X	X	X
RRR VOCs from Synthetic Organic Chemical Manufacturing Industry Reactor Processes	X	X	X	X	X	X	X	X
SSS Magnetic Tape Coating Facilities	X	X	X	X	X	X	X	X
TTT Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines	X	X	X	X	X	X	X	X
UUU Calciners and Dryers in Mineral Industries	X	X	X	X	X	X	X	X
VVV Polymeric Coating of Supporting Substrates Facilities	X	X	X	X	X	X	X	X

WWW Municipal Solid Waste Landfills	X	X	X	X	X	X	X	X
AAAA Small Municipal Waste Combustion Units for which Construction is Commenced after August 30, 1999 or for which Modification or Reconstruction is Commenced after June 6, 2001	X	X		X	X	X		X
BBBB Small Municipal Waste Combustion Units Constructed on or before August 30, 1999 (Emission Guidelines and Compliance Times) CCCC Commercial and Industrial Solid Waste Incineration Units for which Construction is Commenced after November, 30, 1999 or for which Modification or Reconstruction is Commenced on or after June 1, 2001 DDDD Commercial and Industrial Solid Waste Incineration Units that Commenced Construction on or before November 30, 1999 (Emission Guidelines and Compliance Times)	X	X		X	X	X		X

[1]Any authority within any subpart of this part that is not delegable, is not delegated. Please refer to Attachment B to the delegation letters for a listing of the NSPS authorities excluded from delegation.

[2]Washington State Department of Ecology, for 40 CFR 60.17(h)(1), (h)(2), (h)(3) and 40 CFR part 60, subpart AAAA, as in effect on June 6, 2001; for 40 CFR part 60, subpart CCCC, as in effect on June 1, 2001; and for all other NSPS delegated, as in effect February 20, 2001.

[3]Benton Clean Air Authority, for 40 CFR 60.17(h)(1), (h)(2), (h)(3) and 40 CFR part 60, subpart AAAA, as in effect on June 6, 2001; for 40 CFR part 60, subpart CCCC, as in effect on June 1, 2001; and for all other NSPS delegated, as in effect February 20, 2001.

[4]Northwest Air Pollution Authority, for all NSPS delegated, as in effect on July 1, 2000.

[5]Olympic Regional Clean Air Authority, for 40 CFR 60.17(h)(1), (h)(2), (h)(3) and 40 CFR part 60, subpart AAAA, as in effect on June 6, 2001; for 40 CFR part 60, subpart CCCC, as in effect on June 1, 2001; and for all other NSPS delegated, as in effect February 20, 2001.

[6]Puget Sound Clean Air Authority, for all NSPS delegated, as in effect on July 1, 2002.

[7]Spokane County Air Pollution Control Authority, for 40 CFR 60.17(h)(1), (h)(2), (h)(3) and 40 CFR part 60, subpart AAAA, as in effect on June 6, 2001; for 40 CFR part 60, subpart CCCC, as in effect on June 1, 2001; and for all other NSPS delegated, as in effect February 20, 2001.

[8]Southwest Clean Air Agency, for all NSPS delegated, as in effect on July 1, 2000.

[9]Yakima Regional Clean Air Authority, for 40 CFR 60.17(h)(1), (h)(2), (h)(3) and 40 CFR part 60, subpart AAAA, as in effect on June 6, 2001; for 40 CFR part 60, subpart CCCC, as in effect on June 1, 2001; and for all other NSPS delegated, as in effect February 20, 2001.

[10]Subpart S of this part is not delegated to local agencies in Washington because the Washington State Department of Ecology retains sole authority to regulate Primary Aluminum Plants, pursuant to Washington Administrative Code 173-415-010.

[11]Subpart BB of this part is not delegated to local agencies in Washington because the Washington State Department of Ecology retains sole authority to regulate Kraft and Sulfite Pulping Mills, pursuant to Washington State Administrative Code 173-405-012 and 173-410-012.

(50) State of West Virginia, Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE., Charleston, West Virginia 25304.

(51) State of Wisconsin: Wisconsin Department of Natural Resouces, 101 South Webster St., P.O. Box 7921, Madison, Wisconsin 53707-7921.

(52) State of Wyoming, Department of Environmental Quality, Air Quality Division, Herschler Building, 122 West 25th Street, Cheyenne, WY 82002.

NOTE: For a table listing Region VIII's NSPS delegation status, see paragraph (c) of this section.

(53) Territory of Guam: Guam Environmental Protection Agency, P.O. Box 22439 GMF, Barrigada, Guam 96921.

NOTE: For tables listing the delegation status of agencies in Region IX, see paragraph (d) of this section.

(54) Commonwealth of Puerto Rico: Commonwealth of Puerto Rico Environmental Quality Board, P.O. Box 11488, Santurce, PR 00910, Attention: Air Quality Area Director (see table under §60.4(b)(FF)(1)).

(55) U.S. Virgin Islands: U.S. Virgin Islands Department of Conservation and Cultural Affairs, P.O. Box 578, Charlotte Amalie, St. Thomas, VI 00801.

(56) American Samoa: American Samoa Environmental Protection Agency, P.O. Box PPA, Pago Pago, American Samoa 96799.

NOTE: For tables listing the delegation status of agencies in Region IX, see paragraph (d) of this section.

(57) Commonwealth of the Northern Mariana Islands: CNMI Division of Environmental Quality, P.O. Box 501304, Saipan, MP 96950.

NOTE: For tables listing the delegation status of agencies in Region IX, see paragraph (d) of this section.

(c) The delegation status table for New Source Performance Standards for Region VIII can be found online at*http://www2.epa.gov/region8/air-program.*

(d) The following tables list the specific part 60 standards that have been delegated unchanged to the air pollution control agencies in Region IX. The (X) symbol is used to indicate each standard that has been delegated. The following provisions of this subpart are not delegated: §§60.4(b), 60.8(b), 60.9, 60.11(b), 60.11(e), 60.13(a), 60.13(d)(2), 60.13(g), 60.13(i).

(1) *Arizona.* The following table identifies delegations for Arizona:

Delegation Status for New Source Performance Standards for Arizona

	Subpart	Air pollution control agency			
		Arizona DEQ	Maricopa County	Pima County	Pinal County
A	General Provisions	X	X	X	X
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971	X	X	X	X
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978	X	X	X	X
Db	Industrial-Commercial-Institutional Steam Generating Units	X	X	X	X
Dc	Small Industrial-Commercial-Institutional Steam Generating Units	X	X	X	X
E	Incinerators	X	X	X	X
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994	X	X	X	X

Eb	Large Municipal Waste Combustors Constructed After September 20, 1994	X	X	X	
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996	X	X	X	
F	Portland Cement Plants	X	X	X	X
G	Nitric Acid Plants	X	X	X	X
Ga	Nitric Acid Plants For Which Construction, Reconstruction or Modification Commenced After October 14, 2011		X	X	
H	Sulfuric Acid Plant	X	X	X	X
I	Hot Mix Asphalt Facilities	X	X	X	X
J	Petroleum Refineries	X	X	X	X
Ja	Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007		X	X	
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978	X	X	X	X
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984	X	X	X	X
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984	X	X	X	X
L	Secondary Lead Smelters	X	X	X	X
M	Secondary Brass and Bronze Production Plants	X	X	X	X
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973	X	X	X	X
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983	X	X	X	X
O	Sewage Treatment Plants	X	X	X	X
P	Primary Copper Smelters	X	X	X	X
Q	Primary Zinc Smelters	X	X	X	X
R	Primary Lead Smelters	X	X	X	X
S	Primary Aluminum Reduction Plants	X	X	X	X
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	X	X	X	X
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	X	X	X	X
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	X	X	X	X

W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	X	X	X	X
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities	X	X	X	X
Y	Coal Preparation and Processing Plants	X	X	X	X
Z	Ferroalloy Production Facilities	X	X	X	X
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983	X	X	X	X
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983	X	X	X	X
BB	Kraft Pulp Mills	X	X	X	X
BBa	Kraft Pulp Mill Sources for which Construction, Reconstruction or Modification Commenced after May 23, 2013		X	X	
CC	Glass Manufacturing Plants	X	X	X	X
DD	Grain Elevators	X	X	X	X
EE	Surface Coating of Metal Furniture	X	X	X	X
FF	(Reserved)				
Ga	Nitric Acid Plants for which Construction, Reconstruction or Modification Commenced after October 14, 2011		X		
GG	Stationary Gas Turbines	X	X	X	X
HH	Lime Manufacturing Plants	X	X	X	X
KK	Lead-Acid Battery Manufacturing Plants	X	X	X	X
LL	Metallic Mineral Processing Plants	X	X	X	X
MM	Automobile and Light Duty Trucks Surface Coating Operations	X	X	X	X
NN	Phosphate Rock Plants	X	X	X	X
PP	Ammonium Sulfate Manufacture	X	X	X	X
QQ	Graphic Arts Industry: Publication Rotogravure Printing	X	X	X	X
RR	Pressure Sensitive Tape and Label Surface Coating Operations	X	X	X	X
SS	Industrial Surface Coating: Large Appliances	X	X	X	X
TT	Metal Coil Surface Coating	X	X	X	X
UU	Asphalt Processing and Asphalt Roofing Manufacture	X	X	X	X
VV	Equipment Leaks of VOC in the Synthetic Organic Industry Chemicals Manufacturing	X	X	X	X

VVa	Equipment Leaks of VOC in the Synthetic Organic Industry for Which Construction, Reconstruction, or Chemicals Manufacturing Modification Commenced After November 7, 2006	X	X	X	
WW	Beverage Can Surface Coating Industry	X	X	X	X
XX	Bulk Gasoline Terminals	X	X	X	X
AAA	New Residential Wood Heaters	X	X	X	X
BBB	Rubber Tire Manufacturing Industry	X	X	X	X
CCC	(Reserved)				
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry	X	X	X	X
EEE	(Reserved)				
FFF	Flexible Vinyl and Urethane Coating and Printing	X	X	X	X
GGG	Equipment Leaks of VOC in Petroleum Refineries	X	X	X	X
GGGa	Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006	X	X	X	
HHH	Synthetic Fiber Production Facilities	X	X	X	X
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes	X	X	X	X
JJJ	Petroleum Dry Cleaners	X	X	X	X
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants	X	X	X	X
LLL	Onshore Natural Gas Processing: SO_2 Emissions	X	X	X	X
MMM	(Reserved)				
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations	X	X	X	X
OOO	Nonmetallic Mineral Processing Plants	X	X	X	X
PPP	Wool Fiberglass Insulation Manufacturing Plants	X	X	X	X
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems	X	X	X	X
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes	X	X		
SSS	Magnetic Tape Coating Facilities	X	X	X	X
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines	X	X	X	X
UUU	Calciners and Dryers in Mineral Industries	X	X	X	

VVV	Polymeric Coating of Supporting Substrates Facilities	X	X	X	X
WWW	Municipal Solid Waste Landfills	X	X	X	
AAAA	Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modification or Reconstruction is Commended After June 6, 2001	X	X	X	
CCCC	Commercial and Industrial Solid Waste Incineration Units for Which Construction Is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced on or After June 1, 2001	X	X	X	
EEEE	Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006	X	X	X	
GGGG	(Reserved)				
HHHH	(Reserved)				
IIII	Stationary Compression Ignition Internal Combustion Engines	X	X	X	
JJJJ	Stationary Spark Ignition Internal Combustion Engines		X	X	
KKKK	Stationary Combustion Turbines	X	X	X	
LLLL	New Sewage Sludge Incineration Units			X	
MMMM	Emissions Guidelines and Compliance Times for Existing Sewage Sludge Incineration Units	X			
OOOO	Crude Oil and Natural Gas Production, Transmission, and Distribution		X	X	
QQQQ	Standards of Performance for New Residential Hydronic Heaters and Forced-Air Furnaces		X	X	
TTTT	Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units		X		

(2) *California.* The following tables identify delegations for each of the local air pollution control agencies of California.

(i) Delegations for Amador County Air Pollution Control District, Antelope Valley Air Quality Management District, Bay Area Air Quality Management District, and Butte County Air Quality Management District are shown in the following table:

Delegation Status for New Source Performance Standards for Amador County APCD, Antelope Valley AQMD, Bay Area AQMD, and Butte County AQMD

	Subpart	**Air pollution control agency**			
		Amador County APCD	**Antelope Valley AQMD**	**Bay Area AQMD**	**Butte County AQMD**

A	General Provisions		X		
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971		X	X	
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978		X	X	
Db	Industrial-Commercial-Institutional Steam Generating Units		X	X	
Dc	Small Industrial-Commercial-Institutional Steam Generating Units		X	X	
E	Incinerators		X	X	
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994		X	X	
Eb	Large Municipal Waste Combustors Constructed After September 20, 1994		X		
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996		X		
F	Portland Cement Plants		X	X	
G	Nitric Acid Plants		X	X	
Ga	Nitric Acid Plants For Which Construction, Reconstruction or Modification Commenced After October 14, 2011				
H	Sulfuric Acid Plant		X	X	
I	Hot Mix Asphalt Facilities		X	X	
J	Petroleum Refineries		X	X	
Ja	Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007		X		
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978		X	X	
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984		X	X	
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984		X	X	
L	Secondary Lead Smelters		X	X	
M	Secondary Brass and Bronze Production Plants		X	X	
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973		X	X	
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983		X	X	

O	Sewage Treatment Plants		X	X	
P	Primary Copper Smelters		X	X	
Q	Primary Zinc Smelters		X	X	
R	Primary Lead Smelters		X	X	
S	Primary Aluminum Reduction Plants		X	X	
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants		X		
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants		X	X	
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants		X	X	
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants		X	X	
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities		X	X	
Y	Coal Preparation and Processing Plants		X	X	
Z	Ferroalloy Production Facilities		X	X	
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983		X	X	
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983		X	X	
BB	Kraft Pulp Mills		X	X	
CC	Glass Manufacturing Plants		X	X	
DD	Grain Elevators		X	X	
EE	Surface Coating of Metal Furniture		X	X	
FF	(Reserved)				
GG	Stationary Gas Turbines		X	X	
HH	Lime Manufacturing Plants		X	X	
KK	Lead-Acid Battery Manufacturing Plants		X	X	
LL	Metallic Mineral Processing Plants		X	X	
MM	Automobile and Light Duty Trucks Surface Coating Operations		X	X	
NN	Phosphate Rock Plants		X	X	
PP	Ammonium Sulfate Manufacture		X	X	
QQ	Graphic Arts Industry: Publication Rotogravure Printing		X	X	

RR	Pressure Sensitive Tape and Label Surface Coating Operations		X	X	
SS	Industrial Surface Coating: Large Appliances		X	X	
TT	Metal Coil Surface Coating		X	X	
UU	Asphalt Processing and Asphalt Roofing Manufacture		X	X	
VV	Equipment Leaks of VOC in the Synthetic Organic Industry Chemicals Manufacturing		X	X	
VVa	Equipment Leaks of VOC in the Synthetic Organic Industry for Which Construction, Reconstruction, or Chemicals Manufacturing Modification Commenced After November 7, 2006		X		
WW	Beverage Can Surface Coating Industry		X	X	
XX	Bulk Gasoline Terminals				
AAA	New Residential Wood Heaters		X	X	
BBB	Rubber Tire Manufacturing Industry		X	X	
CCC	(Reserved)				
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry		X	X	
EEE	(Reserved)				
FFF	Flexible Vinyl and Urethane Coating and Printing		X	X	
GGG	Equipment Leaks of VOC in Petroleum Refineries		X	X	
GGGa	Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006		X		
HHH	Synthetic Fiber Production Facilities		X	X	
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes		X		
JJJ	Petroleum Dry Cleaners		X	X	
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants		X	X	
LLL	Onshore Natural Gas Processing: SO_2 Emissions		X		
MMM	(Reserved)				
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations		X	X	
OOO	Nonmetallic Mineral Processing Plants		X	X	
PPP	Wool Fiberglass Insulation Manufacturing Plants		X	X	

QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems		X		
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes		X		
SSS	Magnetic Tape Coating Facilities		X	X	
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines		X	X	
UUU	Calciners and Dryers in Mineral Industries		X	X	
VVV	Polymeric Coating of Supporting Substrates Facilities		X	X	
WWW	Municipal Solid Waste Landfills		X		
AAAA	Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modification or Reconstruction is Commended After June 6, 2001		X		
CCCC	Commercial and Industrial Solid Waste Incineration Units for Which Construction Is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced on or After June 1, 2001		X		
EEEE	Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006		X		
GGGG	(Reserved)				
HHHH	(Reserved)				
IIII	Stationary Compression Ignition Internal Combustion Engines		X		
JJJJ	Stationary Spark Ignition Internal Combustion Engines		X		
KKKK	Stationary Combustion Turbines		X		
LLLL	New Sewage Sludge Incineration Units				
OOOO	Crude Oil and Natural Gas Production, Transmission, and Distribution				

(ii) [Reserved]

(iii) Delegations for Glenn County Air Pollution Control District, Great Basin Unified Air Pollution Control District, Imperial County Air Pollution Control District, and Kern County Air Pollution Control District are shown in the following table:

Delegation Status for New Source Performance Standards for Glenn County APCD, Great Basin Unified APCD, Imperial County APCD, and Kern County APCD

	Subpart	**Air pollution control agency**

		Glenn County APCD	Great Basin Unified APCD	Imperial County APCD	Kern County APCD
A	General Provisions		X		X
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971		X		X
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978		X		X
Db	Industrial-Commercial-Institutional Steam Generating Units		X		X
Dc	Small Industrial Steam Generating Units		X		X
E	Incinerators		X		X
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994		X		
Eb	Municipal Waste Combustors Constructed After September 20, 1994				
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996				
F	Portland Cement Plants		X		X
G	Nitric Acid Plants		X		X
H	Sulfuric Acid Plants		X		
I	Hot Mix Asphalt Facilities		X		X
J	Petroleum Refineries		X		X
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978		X		X
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984		X		X
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984		X		X
L	Secondary Lead Smelters		X		X
M	Secondary Brass and Bronze Production Plants		X		X
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973		X		X
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983		X		X

O	Sewage Treatment Plants		X		X
P	Primary Copper Smelters		X		X
Q	Primary Zinc Smelters		X		X
R	Primary Lead Smelters		X		X
S	Primary Aluminum Reduction Plants		X		X
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants		X		X
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants		X		X
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants		X		X
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants		X		X
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities		X		X
Y	Coal Preparation Plants		X		X
Z	Ferroalloy Production Facilities		X		X
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983		X		X
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983		X		X
BB	Kraft pulp Mills		X		X
CC	Glass Manufacturing Plants		X		X
DD	Grain Elevators		X		X
EE	Surface Coating of Metal Furniture		X		X
FF	(Reserved)				
GG	Stationary Gas Turbines		X		X
HH	Lime Manufacturing Plants		X		X
KK	Lead-Acid Battery Manufacturing Plants		X		X
LL	Metallic Mineral Processing Plants		X		X
MM	Automobile and Light Duty Trucks Surface Coating Operations		X		X
NN	Phosphate Rock Plants		X		X
PP	Ammonium Sulfate Manufacture		X		X
QQ	Graphic Arts Industry: Publication Rotogravure Printing		X		X

RR	Pressure Sensitive Tape and Label Surface Coating Operations		X		X
SS	Industrial Surface Coating: Large Appliances		X		X
TT	Metal Coil Surface Coating		X		X
UU	Asphalt Processing and Asphalt Roofing Manufacture		X		X
VV	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry		X		X
WW	Beverage Can Surface Coating Industry		X		X
XX	Bulk Gasoline Terminals				
AAA	New Residential Wool Heaters		X		X
BBB	Rubber Tire Manufacturing Industry		X		X
CCC	(Reserved)				
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry		X		X
EEE	(Reserved)				
FFF	Flexible Vinyl and Urethane Coating and Printing		X		X
GGG	Equipment Leaks of VOC in Petroleum Refineries		X		X
HHH	Synthetic Fiber Production Facilities		X		X
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes		X		X
JJJ	Petroleum Dry Cleaners		X		X
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants		X		X
LLL	Onshore Natural Gas Processing: SO2 Emissions				X
MMM	(Reserved)				
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations		X		X
OOO	Nonmetallic Mineral Processing Plants		X		X
PPP	Wool Fiberglass Insulation Manufacturing Plants		X		X
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems		X		X
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes				X
SSS	Magnetic Tape Coating Facilities		X		X

TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines		X	X	
UUU	Calciners and Dryers in Mineral Industries		X		X
VVV	Polymeric Coating of Supporting Substrates Facilities		X		X
WWW	Municipal Solid Waste Landfills				X

(iv) Delegations for Lake County Air Quality Management District, Lassen County Air Pollution Control District, Mariposa County Air Pollution Control District, and Mendocino County Air Pollution Control District are shown in the following table:

Delegation Status for New Source Performance Standards for Lake County Air Quality Management District, Lassen County Air Pollution Control District, Mariposa County Air Pollution Control District, and Mendocino County Air Pollution Control District

	Subpart	**Air pollution control agency**			
		Lake County AQMD	**Lassen County APCD**	**Mariposa County AQMD**	**Mendocino County AQMD**
A	General Provisions	X			X
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971	X			X
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978	X			X
Db	Industrial-Commercial-Institutional Steam Generating Units	X			
Dc	Small Industrial Steam Generating Units	X			X
E	Incinerators	X			X
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994	X			X
Eb	Municipal Waste Combustors Constructed After September 20, 1994				
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996				
F	Portland Cement Plants	X			X
G	Nitric Acid Plants	X			X
H	Sulfuric Acid Plants	X			X
I	Hot Mix Asphalt Facilities	X			X

J	Petroleum Refineries	X			X
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978	X			X
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984	X			X
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984	X			X
L	Secondary Lead Smelters	X			X
M	Secondary Brass and Bronze Production Plants	X			X
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973	X			X
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983	X			X
O	Sewage Treatment Plants	X			X
P	Primary Copper Smelters	X			X
Q	Primary Zinc Smelters	X			X
R	Primary Lead Smelters	X			X
S	Primary Aluminum Reduction Plants	X			X
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	X			X
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	X			X
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	X			X
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	X			X
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities	X			X
Y	Coal Preparation Plants	X			X
Z	Ferroalloy Production Facilities	X			X
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983	X			X
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983	X			X

BB	Kraft Pulp Mills	X			X
CC	Glass Manufacturing Plants	X			X
DD	Grain Elevators	X			X
EE	Surface Coating of Metal Furniture	X			X
FF	(Reserved)				
GG	Stationary Gas Turbines	X			X
HH	Lime Manufacturing Plants	X			X
KK	Lead-Acid Battery Manufacturing Plants	X			X
LL	Metallic Mineral Processing Plants	X			X
MM	Automobile and Light Duty Trucks Surface Coating Operations	X			X
NN	Phosphate Rock Plants	X			X
PP	Ammonium Sulfate Manufacture	X			X
QQ	Graphic Arts Industry: Publication Rotogravure Printing	X			X
RR	Pressure Sensitive Tape and Label Surface Coating Operations	X			X
SS	Industrial Surface Coating: Large Appliances	X			X
TT	Metal Coil Surface Coating	X			X
UU	Asphalt Processing and Asphalt Roofing Manufacture	X			X
VV	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry	X			X
WW	Beverage Can Surface Coating Industry	X			X
XX	Bulk Gasoline Terminals				
AAA	New Residential Wool Heaters	X			X
BBB	Rubber Tire Manufacturing Industry	X			X
CCC	(Reserved)				
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry	X			X
EEE	(Reserved)				
FFF	Flexible Vinyl and Urethane Coating and Printing	X			X
GGG	Equipment Leaks of VOC in Petroleum Refineries	X			X
HHH	Synthetic Fiber Production Facilities	X			X

III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes	X			X
JJJ	Petroleum Dry Cleaners	X			X
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants	X			X
LLL	Onshore Natural Gas Processing: SO2 Emissions	X			X
MMM	(Reserved)				
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations	X			X
OOO	Nonmetallic Mineral Processing Plants	X			X
PPP	Wool Fiberglass Insulation Manufacturing Plants	X			X
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems	X			X
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes	X			
SSS	Magnetic Tape Coating Facilities	X			X
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines				
UUU	Calciners and Dryers in Mineral Industries	X			X
VVV	Polymeric Coating of Supporting Substrates Facilities	X			X
WWW	Municipal Solid Waste Landfills	X			

(v) Delegations for Modoc Air Pollution Control District, Mojave Desert Air Quality Management District, Monterey Bay Unified Air Pollution Control District and North Coast Unified Air Quality Management District are shown in the following table:

Delegation Status for New Source Performance Standards for Modoc County APCD, Mojave Desert AQMD, Monterey Bay Unified APCD, and North Coast Unified AQMD

	Subpart	**Air pollution control agency**			
		Modoc County APCD	**Mojave Desert AQMD**	**Monterey Bay Unified APCD**	**North Coast Unified AQMD**
A	General Provisions	X	X	X	X
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971	X	X	X	X

Da	Electric Utility Steam Generating Units Constructed After September 18, 1978	X	X	X	X
Db	Industrial-Commercial-Institutional Steam Generating Units	X	X	X	X
Dc	Small Industrial-Commercial-Institutional Steam Generating Units		X	X	
E	Incinerators	X	X	X	X
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994		X		
Eb	Large Municipal Waste Combustors Constructed After September 20, 1994		X		
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996		X		
F	Portland Cement Plants	X	X	X	X
G	Nitric Acid Plants	X	X	X	X
Ga	Nitric Acid Plants For Which Construction, Reconstruction or Modification Commenced After October 14, 2011				
H	Sulfuric Acid Plant	X	X	X	X
I	Hot Mix Asphalt Facilities	X	X	X	X
J	Petroleum Refineries	X	X	X	X
Ja	Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007		X		
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978	X	X	X	X
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984	X	X	X	X
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984	X	X	X	X
L	Secondary Lead Smelters	X	X	X	X
M	Secondary Brass and Bronze Production Plants	X	X	X	X
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973	X	X	X	X
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983	X	X	X	X

O	Sewage Treatment Plants	X	X	X	X
P	Primary Copper Smelters	X	X	X	X
Q	Primary Zinc Smelters	X	X	X	X
R	Primary Lead Smelters	X	X	X	X
S	Primary Aluminum Reduction Plants	X	X	X	X
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	X	X	X	X
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	X	X	X	X
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	X	X	X	X
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	X	X	X	X
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities	X	X	X	X
Y	Coal Preparation and Processing Plants	X	X	X	X
Z	Ferroalloy Production Facilities	X	X	X	X
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983	X	X	X	X
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983	X	X	X	X
BB	Kraft Pulp Mills	X	X	X	X
CC	Glass Manufacturing Plants	X	X	X	X
DD	Grain Elevators	X	X	X	X
EE	Surface Coating of Metal Furniture	X	X	X	X
FF	(Reserved)				
GG	Stationary Gas Turbines	X	X	X	X
HH	Lime Manufacturing Plants	X	X	X	X
KK	Lead-Acid Battery Manufacturing Plants	X	X	X	X
LL	Metallic Mineral Processing Plants	X	X	X	X
MM	Automobile and Light Duty Trucks Surface Coating Operations	X	X	X	X
NN	Phosphate Rock Plants	X	X	X	X
PP	Ammonium Sulfate Manufacture	X	X	X	X
QQ	Graphic Arts Industry: Publication Rotogravure Printing	X	X	X	X

RR	Pressure Sensitive Tape and Label Surface Coating Operations	X	X	X	X
SS	Industrial Surface Coating: Large Appliances	X	X	X	X
TT	Metal Coil Surface Coating	X	X	X	X
UU	Asphalt Processing and Asphalt Roofing Manufacture	X	X	X	X
VV	Equipment Leaks of VOC in the Synthetic Organic Industry Chemicals Manufacturing	X	X	X	X
VVa	Equipment Leaks of VOC in the Synthetic Organic Industry for Which Construction, Reconstruction, or Chemicals Manufacturing Modification Commenced After November 7, 2006		X		
WW	Beverage Can Surface Coating Industry	X	X	X	X
XX	Bulk Gasoline Terminals				
AAA	New Residential Wood Heaters	X	X	X	X
BBB	Rubber Tire Manufacturing Industry	X	X	X	X
CCC	(Reserved)				
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry	X	X	X	
EEE	(Reserved)				
FFF	Flexible Vinyl and Urethane Coating and Printing	X	X	X	X
GGG	Equipment Leaks of VOC in Petroleum Refineries	X	X	X	X
GGGa	Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006		X		
HHH	Synthetic Fiber Production Facilities	X	X	X	X
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes		X		
JJJ	Petroleum Dry Cleaners	X	X	X	X
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants	X	X	X	X
LLL	Onshore Natural Gas Processing: SO_2 Emissions	X	X	X	X
MMM	(Reserved)				
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations	X	X	X	
OOO	Nonmetallic Mineral Processing Plants	X	X	X	X

PPP	Wool Fiberglass Insulation Manufacturing Plants	X	X	X	X
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems	X	X	X	X
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes		X		
SSS	Magnetic Tape Coating Facilities	X	X	X	X
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines	X	X	X	X
UUU	Calciners and Dryers in Mineral Industries		X	X	
VVV	Polymeric Coating of Supporting Substrates Facilities		X	X	X
WWW	Municipal Solid Waste Landfills		X		
AAAA	Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modification or Reconstruction is Commended After June 6, 2001		X		
CCCC	Commercial and Industrial Solid Waste Incineration Units for Which Construction Is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced on or After June 1, 2001		X		
EEEE	Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006		X		
GGGG	(Reserved)				
HHHH	(Reserved)				
IIII	Stationary Compression Ignition Internal Combustion Engines		X		
JJJJ	Stationary Spark Ignition Internal Combustion Engines		X		
KKKK	Stationary Combustion Turbines		X		
LLLL	New Sewage Sludge Incineration Units				
OOOO	Crude Oil and Natural Gas Production, Transmission, and Distribution				

(vi) Delegations for Northern Sierra Air Quality Management District, Northern Sonoma County Air Pollution Control District, Placer County Air Pollution Control District, and Sacramento Metropolitan Air Quality Management District are shown in the following table:

Delegation Status for New Source Performance Standards for Northern Sierra Air Quality Management District, Northern Sonoma County Air Pollution Control District, Placer County Air Pollution Control District, and Sacramento Metropolitan Air Quality Management District

	Subpart	**Air pollution control agency**

		Northern Sierra AQMD	Northern Sonoma County APCD	Placer County APCD	Sacramento Metropolitan AQMD
A	General Provisions		X		X
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971		X		X
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978		X		X
Db	Industrial-Commercial-Institutional Steam Generating Units				X
Dc	Small Industrial Steam Generating Units				X
E	Incinerators		X		X
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994				X
Eb	Municipal Waste Combustors Constructed After September 20, 1994				X
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996				X
F	Portland Cement Plants		X		X
G	Nitric Acid Plants		X		X
H	Sulfuric Acid Plants		X		X
I	Hot Mix Asphalt Facilities		X		X
J	Petroleum Refineries		X		X
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978		X		X
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984		X		X
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984				X
L	Secondary Lead Smelters		X		X
M	Secondary Brass and Bronze Production Plants		X		X
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973		X		X

Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983				X
O	Sewage Treatment Plants		X		X
P	Primary Copper Smelters		X		X
Q	Primary Zinc Smelters		X		X
R	Primary Lead Smelters		X		X
S	Primary Aluminum Reduction Plants		X		X
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants		X		X
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants		X		X
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants		X		X
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants		X		X
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities		X		X
Y	Coal Preparation Plants		X		X
Z	Ferroalloy Production Facilities		X		X
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983		X		X
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983				X
BB	Kraft pulp Mills		X		X
CC	Glass Manufacturing Plants		X		X
DD	Grain Elevators		X		X
EE	Surface Coating of Metal Furniture				X
FF	(Reserved)				
GG	Stationary Gas Turbines		X		X
HH	Lime Manufacturing Plants		X		X
KK	Lead-Acid Battery Manufacturing Plants				X
LL	Metallic Mineral Processing Plants				X
MM	Automobile and Light Duty Trucks Surface Coating Operations		X		X
NN	Phosphate Rock Plants				X

PP	Ammonium Sulfate Manufacture		X		X
QQ	Graphic Arts Industry: Publication Rotogravure Printing				X
RR	Pressure Sensitive Tape and Label Surface Coating Operations				X
SS	Industrial Surface Coating: Large Appliances				X
TT	Metal Coil Surface Coating				X
UU	Asphalt Processing and Asphalt Roofing Manufacture				X
VV	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry				X
WW	Beverage Can Surface Coating Industry				X
XX	Bulk Gasoline Terminals				
AAA	New Residential Wool Heaters				X
BBB	Rubber Tire Manufacturing Industry				X
CCC	(Reserved)				
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry				X
EEE	(Reserved)				
FFF	Flexible Vinyl and Urethane Coating and Printing				X
GGG	Equipment Leaks of VOC in Petroleum Refineries				X
HHH	Synthetic Fiber Production Facilities				X
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes				X
JJJ	Petroleum Dry Cleaners				X
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants				X
LLL	Onshore Natural Gas Processing: SO2 Emissions				X
MMM	(Reserved)				
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations				X
OOO	Nonmetallic Mineral Processing Plants				X
PPP	Wool Fiberglass Insulation Manufacturing Plants				X

QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems				X
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes				X
SSS	Magnetic Tape Coating Facilities				X
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines				X
UUU	Calciners and Dryers in Mineral Industries				X
VVV	Polymeric Coating of Supporting Substrates Facilities				X
WWW	Municipal Solid Waste Landfills				X

(vii) Delegations for San Diego County Air Pollution Control District, San Joaquin Valley Unified Air Pollution Control District, San Luis Obispo County Air Pollution Control District, and Santa Barbara County Air Pollution Control District are shown in the following table:

Delegation Status for New Source Performance Standards for San Diego County APCD, San Joaquin Valley Unified APCD, San Luis Obispo County APCD, and Santa Barbara County APCD

	Subpart	**Air pollution control agency**			
		San Diego County APCD	**San Joaquin Valley Unified APCD**	**San Luis Obispo County APCD**	**Santa Barbara County APCD**
A	General Provisions	X	X	X	X
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971	X	X	X	X
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978	X	X	X	X
Db	Industrial-Commercial-Institutional Steam Generating Units	X	X	X	X
Dc	Small Industrial-Commercial-Institutional Steam Generating Units	X	X	X	X
E	Incinerators	X	X	X	X
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994	X	X	X	
Eb	Large Municipal Waste Combustors Constructed After September 20, 1994	X	X		X
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996	X			X

F	Portland Cement Plants	X	X	X	
G	Nitric Acid Plants	X	X	X	
Ga	Nitric Acid Plants For Which Construction, Reconstruction or Modification Commenced After October 14, 2011				
H	Sulfuric Acid Plant	X	X	X	
I	Hot Mix Asphalt Facilities	X	X	X	X
J	Petroleum Refineries	X	X	X	X
Ja	Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007				X
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978	X	X	X	X
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984	X	X	X	X
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984	X	X	X	X
L	Secondary Lead Smelters	X	X	X	X
M	Secondary Brass and Bronze Production Plants	X	X	X	X
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973	X	X	X	
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983	X	X	X	
O	Sewage Treatment Plants	X	X	X	X
P	Primary Copper Smelters	X	X	X	
Q	Primary Zinc Smelters	X	X	X	
R	Primary Lead Smelters	X	X	X	
S	Primary Aluminum Reduction Plants	X	X	X	
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	X	X	X	
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	X	X	X	
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	X	X	X	
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	X	X	X	

X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities	X	X	X	
Y	Coal Preparation and Processing Plants	X	X	X	
Z	Ferroalloy Production Facilities	X	X	X	
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983	X	X	X	
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983	X	X	X	
BB	Kraft Pulp Mills	X	X	X	
CC	Glass Manufacturing Plants	X	X	X	X
DD	Grain Elevators	X	X	X	X
EE	Surface Coating of Metal Furniture	X	X	X	
FF	(Reserved)				
GG	Stationary Gas Turbines	X	X	X	X
HH	Lime Manufacturing Plants	X	X	X	
KK	Lead-Acid Battery Manufacturing Plants	X	X	X	
LL	Metallic Mineral Processing Plants	X	X	X	
MM	Automobile and Light Duty Trucks Surface Coating Operations	X	X	X	
NN	Phosphate Rock Plants	X	X	X	
PP	Ammonium Sulfate Manufacture	X	X	X	
QQ	Graphic Arts Industry: Publication Rotogravure Printing	X	X	X	
RR	Pressure Sensitive Tape and Label Surface Coating Operations	X	X	X	
SS	Industrial Surface Coating: Large Appliances	X	X	X	
TT	Metal Coil Surface Coating	X	X	X	
UU	Asphalt Processing and Asphalt Roofing Manufacture	X	X	X	
VV	Equipment Leaks of VOC in the Synthetic Organic Industry Chemicals Manufacturing	X	X	X	
VVa	Equipment Leaks of VOC in the Synthetic Organic Industry for Which Construction, Reconstruction, or Chemicals Manufacturing Modification Commenced After November 7, 2006				X
WW	Beverage Can Surface Coating Industry	X	X	X	
XX	Bulk Gasoline Terminals				

AAA	New Residential Wood Heaters	X	X	X	X
BBB	Rubber Tire Manufacturing Industry	X	X	X	
CCC	(Reserved)				
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry	X	X		
EEE	(Reserved)				
FFF	Flexible Vinyl and Urethane Coating and Printing	X	X	X	
GGG	Equipment Leaks of VOC in Petroleum Refineries	X	X	X	
GGGa	Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006				X
HHH	Synthetic Fiber Production Facilities	X	X	X	
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes	X	X		
JJJ	Petroleum Dry Cleaners	X	X	X	
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants	X	X	X	
LLL	Onshore Natural Gas Processing: SO_2 Emissions	X	X	X	
MMM	(Reserved)				
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations	X	X		
OOO	Nonmetallic Mineral Processing Plants	X	X	X	X
PPP	Wool Fiberglass Insulation Manufacturing Plants	X	X	X	
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems	X	X	X	
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes	X	X	X	
SSS	Magnetic Tape Coating Facilities	X	X	X	
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines	X	X	X	
UUU	Calciners and Dryers in Mineral Industries	X	X	X	X
VVV	Polymeric Coating of Supporting Substrates Facilities	X	X	X	X
WWW	Municipal Solid Waste Landfills	X	X	X	X

AAAA	Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modification or Reconstruction is Commended After June 6, 2001	X			X
CCCC	Commercial and Industrial Solid Waste Incineration Units for Which Construction Is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced on or After June 1, 2001	X			X
EEEE	Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006	X			X
GGGG	(Reserved)				
HHHH	(Reserved)				
IIII	Stationary Compression Ignition Internal Combustion Engines				X
JJJJ	Stationary Spark Ignition Internal Combustion Engines				X
KKKK	Stationary Combustion Turbines	X			X
LLLL	New Sewage Sludge Incineration Units				
OOOO	Crude Oil and Natural Gas Production, Transmission, and Distribution				

(viii) Delegations for Shasta County Air Quality Management District, Siskiyou County Air Pollution Control District, South Coast Air Quality Management District, and Tehama County Air Pollution Control District are shown in the following table:

Delegation Status for New Source Performance Standards for Shasta County AQMD, Siskiyou County APCD, South Coast AQMD, and Tehama County APCD

	Subpart	**Air pollution control agency**			
		Shasta County AQMD	**Siskiyou County APCD**	**South Coast AQMD**	**Tehama County APCD**
A	General Provisions	X	X	X	
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971	X		X	
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978			X	
Db	Industrial-Commercial-Institutional Steam Generating Units			X	
Dc	Small Industrial-Commercial-Institutional Steam Generating Units			X	
E	Incinerators	X		X	

Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994			X	
Eb	Large Municipal Waste Combustors Constructed After September 20, 1994			X	
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996			X	
F	Portland Cement Plants	X		X	
G	Nitric Acid Plants	X		X	
Ga	Nitric Acid Plants For Which Construction, Reconstruction or Modification Commenced After October 14, 2011				
H	Sulfuric Acid Plant	X		X	
I	Hot Mix Asphalt Facilities	X		X	
J	Petroleum Refineries	X		X	
Ja	Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007			X	
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978	X		X	
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984			X	
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984			X	
L	Secondary Lead Smelters	X		X	
M	Secondary Brass and Bronze Production Plants	X		X	
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973	X		X	
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983			X	
O	Sewage Treatment Plants	X		X	
P	Primary Copper Smelters	X		X	
Q	Primary Zinc Smelters	X		X	
R	Primary Lead Smelters	X		X	
S	Primary Aluminum Reduction Plants	X		X	

T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	X		X	
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	X		X	
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	X		X	
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	X		X	
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities	X		X	
Y	Coal Preparation and Processing Plants	X		X	
Z	Ferroalloy Production Facilities	X		X	
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983	X		X	
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983			X	
BB	Kraft Pulp Mills	X		X	
CC	Glass Manufacturing Plants			X	
DD	Grain Elevators	X		X	
EE	Surface Coating of Metal Furniture			X	
FF	(Reserved)				
GG	Stationary Gas Turbines			X	
HH	Lime Manufacturing Plants	X		X	
KK	Lead-Acid Battery Manufacturing Plants			X	
LL	Metallic Mineral Processing Plants			X	
MM	Automobile and Light Duty Trucks Surface Coating Operations			X	
NN	Phosphate Rock Plants			X	
PP	Ammonium Sulfate Manufacture			X	
QQ	Graphic Arts Industry: Publication Rotogravure Printing			X	
RR	Pressure Sensitive Tape and Label Surface Coating Operations			X	
SS	Industrial Surface Coating: Large Appliances			X	
TT	Metal Coil Surface Coating			X	
UU	Asphalt Processing and Asphalt Roofing Manufacture			X	
VV	Equipment Leaks of VOC in the Synthetic Organic Industry Chemicals Manufacturing			X	

VVa	Equipment Leaks of VOC in the Synthetic Organic Industry for Which Construction, Reconstruction, or Chemicals Manufacturing Modification Commenced After November 7, 2006			X	
WW	Beverage Can Surface Coating Industry			X	
XX	Bulk Gasoline Terminals				
AAA	New Residential Wood Heaters		X	X	
BBB	Rubber Tire Manufacturing Industry		X	X	
CCC	(Reserved)				
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry			X	
EEE	(Reserved)				
FFF	Flexible Vinyl and Urethane Coating and Printing			X	
GGG	Equipment Leaks of VOC in Petroleum Refineries			X	
GGGa	Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006			X	
HHH	Synthetic Fiber Production Facilities			X	
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes			X	
JJJ	Petroleum Dry Cleaners			X	
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants			X	
LLL	Onshore Natural Gas Processing: SO_2 Emissions			X	
MMM	(Reserved)				
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations			X	
OOO	Nonmetallic Mineral Processing Plants			X	
PPP	Wool Fiberglass Insulation Manufacturing Plants			X	
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems		X	X	
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes			X	
SSS	Magnetic Tape Coating Facilities		X	X	
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines		X	X	
UUU	Calciners and Dryers in Mineral Industries			X	

VVV	Polymeric Coating of Supporting Substrates Facilities			X	
WWW	Municipal Solid Waste Landfills			X	
AAAA	Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modification or Reconstruction is Commended After June 6, 2001	X	X	X	
CCCC	Commercial and Industrial Solid Waste Incineration Units for Which Construction Is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced on or After June 1, 2001			X	
EEEE	Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006			X	
GGGG	(Reserved)				
HHHH	(Reserved)				
IIII	Stationary Compression Ignition Internal Combustion Engines			X	
JJJJ	Stationary Spark Ignition Internal Combustion Engines			X	
KKKK	Stationary Combustion Turbines			X	
LLLL	New Sewage Sludge Incineration Units				
OOOO	Crude Oil and Natural Gas Production, Transmission, and Distribution				

(ix) Delegations for Tuolumne County Air Pollution Control District, Ventura County Air Pollution Control District, and Yolo-Solano Air Quality Management District are shown in the following table:

Delegation Status for New Source Performance Standards for Tuolumne County Air Pollution Control District, Ventura County Air Pollution Control District, and Yolo-Solano Air Quality Management District

	Subpart	**Air Pollution Control Agency**		
		Tuolumne County APCD	**Ventura County APCD**	**Yolo-Solano AQMD**
A	General Provisions	X	X	
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971	X	X	
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978	X		
Db	Industrial-Commercial-Institutional Steam Generating Units	X	X	
Dc	Small Industrial Steam Generating Units	X		
E	Incinerators	X		

Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994	X		
Eb	Municipal Waste Combustors Constructed After September 20, 1994	X		
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996	X		
F	Portland Cement Plants	X		
G	Nitric Acid Plants	X		
H	Sulfuric Acid Plants	X		
I	Hot Mix Asphalt Facilities	X	X	
J	Petroleum Refineries	X	X	
Ja	Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007			
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978	X	X	
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984	X		
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984	X		
L	Secondary Lead Smelters	X		
M	Secondary Brass and Bronze Production Plants	X		
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973	X		
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983	X		
O	Sewage Treatment Plants	X		
P	Primary Copper Smelters	X		
Q	Primary Zinc Smelters	X		
R	Primary Lead Smelters	X		
S	Primary Aluminum Reduction Plants	X		
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	X		
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	X		
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	X		

W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	X		
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities	X		
Y	Coal Preparation Plants	X		
Z	Ferroalloy Production Facilities	X		
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983	X	X	
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983	X		
BB	Kraft pulp Mills	X		
CC	Glass Manufacturing Plants	X		
DD	Grain Elevators	X		
EE	Surface Coating of Metal Furniture	X		
FF	(Reserved)			
GG	Stationary Gas Turbines	X		
HH	Lime Manufacturing Plants	X		
KK	Lead-Acid Battery Manufacturing Plants	X		
LL	Metallic Mineral Processing Plants	X		
MM	Automobile and Light Duty Trucks Surface Coating Operations	X		
NN	Phosphate Rock Plants	X		
PP	Ammonium Sulfate Manufacture	X		
QQ	Graphic Arts Industry: Publication Rotogravure Printing	X		
RR	Pressure Sensitive Tape and Label Surface Coating Operations	X		
SS	Industrial Surface Coating: Large Appliances	X		
TT	Metal Coil Surface Coating	X		
UU	Asphalt Processing and Asphalt Roofing Manufacture	X		
VV	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry	X		
VVa	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006			
WW	Beverage Can Surface Coating Industry	X		

XX	Bulk Gasoline Terminals			
AAA	New Residential Wood Heaters	X		
BBB	Rubber Tire Manufacturing Industry	X		
CCC	(Reserved)			
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry	X		
EEE	(Reserved)			
FFF	Flexible Vinyl and Urethane Coating and Printing	X		
GGG	Equipment Leaks of VOC in Petroleum Refineries	X		
GGGa	Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006			
HHH	Synthetic Fiber Production Facilities	X		
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes	X		
JJJ	Petroleum Dry Cleaners	X		
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants	X		
LLL	Onshore Natural Gas Processing: SO2 Emissions	X		
MMM	(Reserved)			
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations	X		
OOO	Nonmetallic Mineral Processing Plants	X	X	
PPP	Wool Fiberglass Insulation Manufacturing Plants	X		
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems	X		
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes	X		
SSS	Magnetic Tape Coating Facilities	X		
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines	X		
UUU	Calciners and Dryers in Mineral Industries	X		
VVV	Polymeric Coating of Supporting Substrates Facilities	X		
WWW	Municipal Solid Waste Landfills	X	X	

AAAA	Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modification or Reconstruction is Commenced After June 6, 2001	X		
CCCC	Commercial and Industrial Solid Waste Incineration Units for Which Construction Is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced on or After June 1, 2001	X		
EEEE	Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006			
GGGG	(Reserved)			
IIII	Stationary Compression Ignition Internal Combustion Engines			
JJJJ	Stationary Spark Ignition Internal Combustion Engines			
KKKK	Stationary Combustion Turbines			

(3) *Hawaii.* The following table identifies delegations for Hawaii:

Delegation Status for New Source Performance Standards for Hawaii:

	Subpart	**Hawaii**
A	General Provisions	X
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971	X
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978	X
Db	Industrial-Commercial-Institutional Steam Generating Units	X
Dc	Small Industrial Steam Generating Units	X
E	Incinerators	X
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994	X
Eb	Municipal Waste Combustors Constructed After September 20, 1994	X
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996	X
F	Portland Cement Plants	X
G	Nitric Acid Plants	
H	Sulfuric Acid Plants	
I	Hot Mix Asphalt Facilities	X
J	Petroleum Refineries	X

Ja	Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007	
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978	X
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984	X
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984	X
L	Secondary Lead Smelters	
M	Secondary Brass and Bronze Production Plants	
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973	
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983	
O	Sewage Treatment Plants	X
P	Primary Copper Smelters	
Q	Primary Zinc Smelters	
R	Primary Lead Smelters	
S	Primary Aluminum Reduction Plants	
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities	
Y	Coal Preparation Plants	X
Z	Ferroalloy Production Facilities	
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983	X
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983	X
BB	Kraft pulp Mills	
CC	Glass Manufacturing Plants	
DD	Grain Elevators	
EE	Surface Coating of Metal Furniture	
FF	(Reserved)	

GG	Stationary Gas Turbines	X
HH	Lime Manufacturing Plants	
KK	Lead-Acid Battery Manufacturing Plants	
LL	Metallic Mineral Processing Plants	
MM	Automobile and Light Duty Trucks Surface Coating Operations	
NN	Phosphate Rock Plants	
PP	Ammonium Sulfate Manufacture	
QQ	Graphic Arts Industry: Publication Rotogravure Printing	
RR	Pressure Sensitive Tape and Label Surface Coating Operations	
SS	Industrial Surface Coating: Large Appliances	
TT	Metal Coil Surface Coating	
UU	Asphalt Processing and Asphalt Roofing Manufacture	
VV	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry	X
VVa	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006	
WW	Beverage Can Surface Coating Industry	X
XX	Bulk Gasoline Terminals	X
AAA	New Residential Wool Heaters	
BBB	Rubber Tire Manufacturing Industry	
CCC	(Reserved)	
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry	
EEE	(Reserved)	
FFF	Flexible Vinyl and Urethane Coating and Printing	
GGG	Equipment Leaks of VOC in Petroleum Refineries	X
GGGa	Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006	
HHH	Synthetic Fiber Production Facilities	
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes	
JJJ	Petroleum Dry Cleaners	X

KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants	
LLL	Onshore Natural Gas Processing: SO2 Emissions	
MMM	(Reserved)	
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations	X
OOO	Nonmetallic Mineral Processing Plants	X
PPP	Wool Fiberglass Insulation Manufacturing Plants	
QQQ	VOC Emissions From Petroleum Refinery Wastewater	X
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes	
SSS	Magnetic Tape Coating Facilities	
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines	
UUU	Calciners and Dryers in Mineral Industries	X
VVV	Polymeric Coating of Supporting Substrates Facilities	X
WWW	Municipal Solid Waste Landfills	X
AAAA	Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modification or Reconstruction is Commenced After June 6, 2001	X
CCCC	Commercial and Industrial Solid Waste Incineration Units for Which Construction Is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced on or After June 1, 2001	X
EEEE	Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006	
GGGG	(Reserved)	
IIII	Stationary Compression Ignition Internal Combustion Engines	
JJJJ	Stationary Spark Ignition Internal Combustion Engines	
KKKK	Stationary Combustion Turbines	

(4) *Nevada.* The following table identifies delegations for Nevada:

Delegation Status for New Source Performance Standards for Nevada

	Subpart	**Air pollution control agency**		
		Nevada DEP	**Clark County**	**Washoe County**

A	General Provisions	X	X	X
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971	X	X	X
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978	X	X	
Db	Industrial-Commercial-Institutional Steam Generating Units	X	X	
Dc	Small Industrial-Commercial-Institutional Steam Generating Units	X	X	
E	Incinerators	X	X	X
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994	X	X	
Eb	Large Municipal Waste Combustors Constructed After September 20, 1994	X	X	
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996	X	X	
F	Portland Cement Plants	X	X	X
G	Nitric Acid Plants	X	X	
Ga	Nitric Acid Plants For Which Construction, Reconstruction or Modification Commenced After October 14, 2011	X		
H	Sulfuric Acid Plant	X	X	
I	Hot Mix Asphalt Facilities	X	X	X
J	Petroleum Refineries	X	X	
Ja	Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007	X		
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978	X	X	X
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984	X	X	X
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984	X	X	
L	Secondary Lead Smelters	X	X	X
M	Secondary Brass and Bronze Production Plants	X	X	
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973	X	X	
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983	X	X	
O	Sewage Treatment Plants	X	X	X

P	Primary Copper Smelters	X	X	X
Q	Primary Zinc Smelters	X	X	X
R	Primary Lead Smelters	X	X	X
S	Primary Aluminum Reduction Plants	X	X	
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	X	X	
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	X	X	
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	X	X	
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	X	X	
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities	X	X	
Y	Coal Preparation and Processing Plants	X	X	X
Z	Ferroalloy Production Facilities	X	X	
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983	X	X	
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983	X	X	
BB	Kraft Pulp Mills	X	X	
CC	Glass Manufacturing Plants	X	X	
DD	Grain Elevators	X	X	X
EE	Surface Coating of Metal Furniture	X	X	X
FF	(Reserved)			
GG	Stationary Gas Turbines	X	X	X
HH	Lime Manufacturing Plants	X	X	X
KK	Lead-Acid Battery Manufacturing Plants	X	X	X
LL	Metallic Mineral Processing Plants	X	X	X
MM	Automobile and Light Duty Trucks Surface Coating Operations	X	X	X
NN	Phosphate Rock Plants	X	X	X
PP	Ammonium Sulfate Manufacture	X	X	
QQ	Graphic Arts Industry: Publication Rotogravure Printing	X	X	X
RR	Pressure Sensitive Tape and Label Surface Coating Operations	X	X	
SS	Industrial Surface Coating: Large Appliances	X	X	X

TT	Metal Coil Surface Coating	X	X	X
UU	Asphalt Processing and Asphalt Roofing Manufacture	X	X	X
VV	Equipment Leaks of VOC in the Synthetic Organic Industry Chemicals Manufacturing	X	X	X
VVa	Equipment Leaks of VOC in the Synthetic Organic Industry for Which Construction, Reconstruction, or Chemicals Manufacturing Modification Commenced After November 7, 2006	X	X	
WW	Beverage Can Surface Coating Industry	X	X	
XX	Bulk Gasoline Terminals	X	X	
AAA	New Residential Wood Heaters		X	
BBB	Rubber Tire Manufacturing Industry	X	X	
CCC	(Reserved)			
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry	X	X	
EEE	(Reserved)			
FFF	Flexible Vinyl and Urethane Coating and Printing	X	X	
GGG	Equipment Leaks of VOC in Petroleum Refineries	X	X	
GGGa	Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006	X	X	
HHH	Synthetic Fiber Production Facilities	X	X	
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes	X	X	
JJJ	Petroleum Dry Cleaners	X	X	X
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants	X	X	
LLL	Onshore Natural Gas Processing: SO_2 Emissions	X	X	
MMM	(Reserved)			
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations	X	X	
OOO	Nonmetallic Mineral Processing Plants	X	X	
PPP	Wool Fiberglass Insulation Manufacturing Plants	X	X	
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems	X	X	
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes	X	X	
SSS	Magnetic Tape Coating Facilities	X	X	

TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines	X	X	X
UUU	Calciners and Dryers in Mineral Industries	X	X	X
VVV	Polymeric Coating of Supporting Substrates Facilities	X	X	X
WWW	Municipal Solid Waste Landfills	X	X	X
AAAA	Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modification or Reconstruction is Commended After June 6, 2001	X	X	X
CCCC	Commercial and Industrial Solid Waste Incineration Units for Which Construction Is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced on or After June 1, 2001	X	X	X
EEEE	Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006	X	X	X
GGGG	(Reserved)			
HHHH	(Reserved)			
IIII	Stationary Compression Ignition Internal Combustion Engines	X	X	X
JJJJ	Stationary Spark Ignition Internal Combustion Engines	X	X	X
KKKK	Stationary Combustion Turbines	X	X	X
LLLL	New Sewage Sludge Incineration Units		X	
OOOO	Crude Oil and Natural Gas Production, Transmission, and Distribution	X		

(5) *Guam.* The following table identifies delegations as of June 15, 2001:

Delegation Status for New Source Performance Standards for Guam

	Subpart	**Guam**
A	General Provisions	X
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971	X
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978	
Db	Industrial-Commercial-Institutional Steam Generating Units	
Dc	Small Industrial Steam Generating Units	
E	Incinerators	
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994	
Eb	Municipal Waste Combustors Constructed After September 20, 1994	

Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996	
F	Portland Cement Plants	X
G	Nitric Acid Plants	
H	Sulfuric Acid Plants	
I	Hot Mix Asphalt Facilities	X
J	Petroleum Refineries	X
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978	X

(e) The following lists the specific part 60 standards that have been delegated unchanged to the air pollution control agencies in Region 6.

(1) *New Mexico.* The New Mexico Environment Department has been delegated all part 60 standards promulgated by EPA, except subpart AAA—Standards of Performance for New Residential Wood Heaters; and subpart HHHH—Emission Guidelines and Compliance Times for Coal-Fired Electric Steam Generating Units, as amended in the FEDERAL REGISTER through September 23, 2013.

(2) *Louisiana.* The Louisiana Department of Environmental Quality has been delegated all part 60 standards promulgated by EPA, except subpart AAA—Standards of Performance for New Residential Wood Heaters, as amended in the FEDERAL REGISTER through July 1, 2013.

Delegation Status for Part 60 Standards—State of Louisiana

[Excluding Indian Country]

Subpart	Source category	LDEQ[1]
A	General Provisions	Yes
Ce	Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Waste Incinerators	Yes
D	Fossil Fueled Steam Generators (>250 MM BTU/hr)	Yes
Da	Electric Utility Steam Generating Units (>250 MM BTU/hr)	Yes
Db	Industrial-Commercial-Institutional Steam Generating Units (100 to 250 MM BTU/hr)	Yes
Dc	Industrial-Commercial-Institutional Small Steam Generating Units (10 to 100 MM BTU/hr)	Yes
E	Incinerators (>50 tons per day)	Yes
Ea	Municipal Waste Combustors	Yes
Eb	Large Municipal Waste Combustors	Yes
Ec	Hospital/Medical/Infectious Waste Incinerators	Yes
F	Portland Cement Plants	Yes

G	Nitric Acid Plants	Yes
Ga	Nitric Acid Plants (after October 14, 2011)	Yes
H	Sulfuric Acid Plants	Yes
I	Hot Mix Asphalt Facilities	Yes
J	Petroleum Refineries	Yes
Ja	Petroleum Refineries (After May 14, 2007)	Yes
K	Storage Vessels for Petroleum Liquids (After 6/11/73 & Before 5/19/78)	Yes
Ka	Storage Vessels for Petroleum Liquids (After 6/11/73 & Before 5/19/78)	Yes
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Stg/Vessels) After 7/23/84	Yes
L	Secondary Lead Smelters Yes	Yes
M	Secondary Brass and Bronze Production Plants	Yes
N	Primary Emissions from Basic Oxygen Process Furnaces (Construction Commenced After June 11, 1973)	Yes
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities Construction is Commenced After January 20, 1983	Yes
O	Sewage Treatment Plants	Yes
P	Primary Copper Smelters	Yes
Q	Primary Zinc Smelters	Yes
R	Primary Lead Smelters	Yes
S	Primary Aluminum Reduction Plants	Yes
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Plants	Yes
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	Yes
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	Yes
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	Yes
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities	Yes
Y	Coal Preparation Plants	Yes
Z	Ferroalloy Production Facilities	Yes
AA	Steel Plants: Electric Arc Furnaces After 10/21/74 & On or Before 8/17/83	Yes
AAa	Steel Plants: Electric Arc Furnaces & Argon-Oxygen Decarburization Vessels After 8/07/83	Yes
BB	Kraft Pulp Mills	Yes
CC	Glass Manufacturing Plants	Yes

DD	Grain Elevators	Yes
EE	Surface Coating of Metal Furniture	Yes
GG	Stationary Gas Turbines	Yes
HH	Lime Manufacturing Plants	Yes
KK	Lead-Acid Battery Manufacturing Plants	Yes
LL	Metallic Mineral Processing Plants	Yes
MM	Automobile & Light Duty Truck Surface Coating Operations	Yes
NN	Phosphate Manufacturing Plants	Yes
PP	Ammonium Sulfate Manufacture	Yes
QQ	Graphic Arts Industry: Publication Rotogravure Printing	Yes
RR	Pressure Sensitive Tape and Label Surface Coating Operations	Yes
SS	Industrial Surface Coating: Large Appliances	Yes
TT	Metal Coil Surface Coating	Yes
UU	Asphalt Processing and Asphalt Roofing Manufacture	Yes
VV	VOC Equipment Leaks in the SOCMI Industry	Yes
VVa	VOC Equipment Leaks in the SOCMI Industry (After November 7, 2006)	Yes
XX	Bulk Gasoline Terminals	Yes
AAA	New Residential Wood Heaters	No
BBB	Rubber Tire Manufacturing Industry	Yes
DDD	Volatile Organic Compound (VOC) Emissions from the Polymer Manufacturing Industry	Yes
FFF	Flexible Vinyl and Urethane Coating and Printing	Yes
GGG	VOC Equipment Leaks in Petroleum Refineries	Yes
HHH	Synthetic Fiber Production	Yes
III	VOC Emissions from the SOCMI Air Oxidation Unit Processes	Yes
JJJ	Petroleum Dry Cleaners	Yes
KKK	VOC Equipment Leaks From Onshore Natural Gas Processing Plants	Yes
LLL	Onshore Natural Gas Processing: SO_2 Emissions	Yes
NNN	VOC Emissions from SOCMI Distillation Operations	Yes
OOO	Nonmetallic Mineral Processing Plants	Yes

PPP	Wool Fiberglass Insulation Manufacturing Plants	Yes
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems	Yes
RRR	VOC Emissions from SOCMI Reactor Processes	Yes
SSS	Magnetic Tape Coating Operations	Yes
TTT	Industrial Surface Coating: Plastic Parts for Business Machines	Yes
UUU	Calciners and Dryers in Mineral Industries	Yes
VVV	Polymeric Coating of Supporting Substrates Facilities	Yes
WWW	Municipal Solid Waste Landfills	Yes
AAAA	Small Municipal Waste Combustion Units (Construction is Commenced After 8/30/99 or Modification/Reconstruction is Commenced After 6/06/2001)	Yes
CCCC	Commercial & Industrial Solid Waste Incineration Units (Construction is Commenced After 11/30/1999 or Modification/Reconstruction is Commenced on or After 6/01/2001)	Yes
DDDD	Emission Guidelines & Compliance Times for Commercial & Industrial Solid Waste Incineration Units (Commenced Construction On or Before 11/30/1999)	Yes
EEEE	Other Solid Waste Incineration Units (Constructed after 12/09/2004 or Modification/Reconstruction is commenced on or after 06/16/2004)	Yes
IIII	Stationary Compression Ignition Internal Combustion Engines	Yes
JJJJ	Stationary Spark Ignition Internal Combustion Engines	Yes
KKKK	Stationary Combustion Turbines (Construction Commenced After 02/18/2005)	Yes
LLLL	New Sewage Sludge Incineration Units	Yes
MMMM	Emission Guidelines and Compliance Times for Existing Sewage Sludge Incineration Units	Yes
OOOO	Crude Oil and Natural Gas Production, Transmission and Distribution	Yes

[1]The Louisiana Department of Environmental Quality (LDEQ) has been delegated all Part 60 standards promulgated by EPA, except subpart AAA—Standards of Performance for New Residential Wood Heaters—as amended in the FEDERAL REGISTER through July 1, 2013.

(3) *Albuquerque-Bernalillo County Air Quality Control Board.* The Albuquerque-Bernalillo County Air Quality Control Board has been delegated all part 60 standards promulgated by EPA, except subpart AAA—Standards of Performance for New Residential Wood Heaters, as amended in the FEDERAL REGISTER through September 13, 2013.

§60.5 Determination of construction or modification.

(a) When requested to do so by an owner or operator, the Administrator will make a determination of whether action taken or intended to be taken by such owner or operator constitutes construction (including reconstruction) or modification or the commencement thereof within the meaning of this part.

(b) The Administrator will respond to any request for a determination under paragraph (a) of this section within 30 days of receipt of such request.

§60.6 Review of plans.

(a) When requested to do so by an owner or operator, the Administrator will review plans for construction or modification for the purpose of providing technical advice to the owner or operator.

(b)(1) A separate request shall be submitted for each construction or modification project.

(2) Each request shall identify the location of such project, and be accompanied by technical information describing the proposed nature, size, design, and method of operation of each affected facility involved in such project, including information on any equipment to be used for measurement or control of emissions.

(c) Neither a request for plans review nor advice furnished by the Administrator in response to such request shall (1) relieve an owner or operator of legal responsibility for compliance with any provision of this part or of any applicable State or local requirement, or (2) prevent the Administrator from implementing or enforcing any provision of this part or taking any other action authorized by the Act.

§60.7 Notification and record keeping.

(a) Any owner or operator subject to the provisions of this part shall furnish the Administrator written notification or, if acceptable to both the Administrator and the owner or operator of a source, electronic notification, as follows:

(1) A notification of the date construction (or reconstruction as defined under §60.15) of an affected facility is commenced postmarked no later than 30 days after such date. This requirement shall not apply in the case of mass-produced facilities which are purchased in completed form.

(2) [Reserved]

(3) A notification of the actual date of initial startup of an affected facility postmarked within 15 days after such date.

(4) A notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless that change is specifically exempted under an applicable subpart or in §60.14(e). This notice shall be postmarked 60 days or as soon as practicable before the change is commenced and shall include information describing the precise nature of the change, present and proposed emission control systems, productive capacity of the facility before and after the change, and the expected completion date of the change. The Administrator may request additional relevant information subsequent to this notice.

(5) A notification of the date upon which demonstration of the continuous monitoring system performance commences in accordance with §60.13(c). Notification shall be postmarked not less than 30 days prior to such date.

(6) A notification of the anticipated date for conducting the opacity observations required by §60.11(e)(1) of this part. The notification shall also include, if appropriate, a request for the Administrator to provide a visible emissions reader during a performance test. The notification shall be postmarked not less than 30 days prior to such date.

(7) A notification that continuous opacity monitoring system data results will be used to determine compliance with the applicable opacity standard during a performance test required by §60.8 in lieu of Method 9 observation data as allowed by §60.11(e)(5) of this part. This notification shall be postmarked not less than 30 days prior to the date of the performance test.

(b) Any owner or operator subject to the provisions of this part shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air

pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.

(c) Each owner or operator required to install a continuous monitoring device shall submit excess emissions and monitoring systems performance report (excess emissions are defined in applicable subparts) and-or summary report form (see paragraph (d) of this section) to the Administrator semiannually, except when: more frequent reporting is specifically required by an applicable subpart; or the Administrator, on a case-by-case basis, determines that more frequent reporting is necessary to accurately assess the compliance status of the source. All reports shall be postmarked by the 30th day following the end of each six-month period. Written reports of excess emissions shall include the following information:

(1) The magnitude of excess emissions computed in accordance with §60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.

(2) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

(3) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

(4) When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

(d) The summary report form shall contain the information and be in the format shown in figure 1 unless otherwise specified by the Administrator. One summary report form shall be submitted for each pollutant monitored at each affected facility.

(1) If the total duration of excess emissions for the reporting period is less than 1 percent of the total operating time for the reporting period and CMS downtime for the reporting period is less than 5 percent of the total operating time for the reporting period, only the summary report form shall be submitted and the excess emission report described in §60.7(c) need not be submitted unless requested by the Administrator.

(2) If the total duration of excess emissions for the reporting period is 1 percent or greater of the total operating time for the reporting period or the total CMS downtime for the reporting period is 5 percent or greater of the total operating time for the reporting period, the summary report form and the excess emission report described in §60.7(c) shall both be submitted.

Figure 1—Summary Report—Gaseous and Opacity Excess Emission and Monitoring System Performance

Pollutant (Circle One—SO_2/NO_x/TRS/H_2S/CO/Opacity)

Reporting period dates: From_____to_____

Company:

Emission Limitation

Address:

Monitor Manufacturer and Model No.

Date of Latest CMS Certification or Audit

Process Unit(s) Description:

Total source operating time in reporting period[1]

Emission data summary[1]		CMS performance summary[1]	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Startup/shutdown		a. Monitor equipment malfunctions	
b. Control equipment problems		b. Non-Monitor equipment malfunctions	
c. Process problems		c. Quality assurance calibration	
d. Other known causes		d. Other known causes	
e. Unknown causes		e. Unknown causes	
2. Total duration of excess emission		2. Total CMS Downtime	
3. Total duration of excess emissions × (100) [Total source operating time]	%[2]	3. [Total CMS Downtime] × (100) [Total source operating time]	%[2]

[1]For opacity, record all times in minutes. For gases, record all times in hours.

[2]For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or th e total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in §60.7(c) shall be submitted.

On a separate page, describe any changes since last quarter in CMS, process or controls. I certify that the information contained in this report is true, accurate, and complete.

Name

Signature

Title

Date

(e)(1) Notwithstanding the frequency of reporting requirements specified in paragraph (c) of this section, an owner or operator who is required by an applicable subpart to submit excess emissions and monitoring systems performance reports (and summary reports) on a quarterly (or more frequent) basis may reduce the frequency of reporting for that standard to semiannual if the following conditions are met:

(i) For 1 full year (e.g., 4 quarterly or 12 monthly reporting periods) the affected facility's excess emissions and monitoring systems reports submitted to comply with a standard under this part continually demonstrate that the facility is in compliance with the applicable standard;

(ii) The owner or operator continues to comply with all recordkeeping and monitoring requirements specified in this subpart and the applicable standard; and

(iii) The Administrator does not object to a reduced frequency of reporting for the affected facility,as provided in paragraph (e)(2) of this section.

(2) The frequency of reporting of excess emissions and monitoring systems performance (and summary) reports may be reduced only after the owner or operator notifies the Administrator in writing of his or her intention to

make such a change and the Administrator does not object to the intended change. In deciding whether to approve a reduced frequency of reporting, the Administrator may review information concerning the source's entire previous performance history during the required recordkeeping period prior to the intended change, including performance test results, monitoring data, and evaluations of an owner or operator's conformance with operation and maintenance requirements. Such information may be used by the Administrator to make a judgment about the source's potential for noncompliance in the future. If the Administrator disapproves the owner or operator's request to reduce the frequency of reporting, the Administrator will notify the owner or operator in writing within 45 days after receiving notice of the owner or operator's intention. The notification from the Administrator to the owner or operator will specify the grounds on which the disapproval is based. In the absence of a notice of disapproval within 45 days, approval is automatically granted.

(3) As soon as monitoring data indicate that the affected facility is not in compliance with any emission limitation or operating parameter specified in the applicable standard, the frequency of reporting shall revert to the frequency specified in the applicable standard, and the owner or operator shall submit an excess emissions and monitoring systems performance report (and summary report, if required) at the next appropriate reporting period following the noncomplying event. After demonstrating compliance with the applicable standard for another full year, the owner or operator may again request approval from the Administrator to reduce the frequency of reporting for that standard as provided for in paragraphs (e)(1) and (e)(2) of this section.

(f) Any owner or operator subject to the provisions of this part shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this part recorded in a permanent form suitable for inspection. The file shall be retained for at least two years following the date of such measurements, maintenance, reports, and records, except as follows:

(1) This paragraph applies to owners or operators required to install a continuous emissions monitoring system (CEMS) where the CEMS installed is automated, and where the calculated data averages do not exclude periods of CEMS breakdown or malfunction. An automated CEMS records and reduces the measured data to the form of the pollutant emission standard through the use of a computerized data acquisition system. In lieu of maintaining a file of all CEMS subhourly measurements as required under paragraph (f) of this section, the owner or operator shall retain the most recent consecutive three averaging periods of subhourly measurements and a file that contains a hard copy of the data acquisition system algorithm used to reduce the measured data into the reportable form of the standard.

(2) This paragraph applies to owners or operators required to install a CEMS where the measured data is manually reduced to obtain the reportable form of the standard, and where the calculated data averages do not exclude periods of CEMS breakdown or malfunction. In lieu of maintaining a file of all CEMS subhourly measurements as required under paragraph (f) of this section, the owner or operator shall retain all subhourly measurements for the most recent reporting period. The subhourly measurements shall be retained for 120 days from the date of the most recent summary or excess emission report submitted to the Administrator.

(3) The Administrator or delegated authority, upon notification to the source, may require the owner or operator to maintain all measurements as required by paragraph (f) of this section, if the Administrator or the delegated authority determines these records are required to more accurately assess the compliance status of the affected source.

(g) If notification substantially similar to that in paragraph (a) of this section is required by any other State or local agency, sending the Administrator a copy of that notification will satisfy the requirements of paragraph (a) of this section.

(h) Individual subparts of this part may include specific provisions which clarify or make inapplicable the provisions set forth in this section.

§60.8 Performance tests.

(a) Except as specified in paragraphs (a)(1),(a)(2), (a)(3), and (a)(4) of this section, within 60 days after achievingthe maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of such facility, or at such other times specified by this part, and at such other times as may be required by the Administrator under section 114 of the Act, the owner or operator of such facility shall conduct performance test(s) and furnish the Administrator a written report of the results of such performance test(s).

(1) If a force majeure is about to occur, occurs, or has occurred for which the affected owner or operator intends to assert a claim of force majeure, the owner or operator shall notify the Administrator, in writing as soon as practicable following the date the owner or operator first knew, or through due diligence should have known that the event may cause or caused a delay in testing beyond the regulatory deadline, but the notification must occur before the performance test deadline unless the initial force majeure or a subsequent force majeure event delays the notice, and in such cases, the notification shall occur as soon as practicable.

(2) The owner or operator shall provide to the Administrator a written description of the force majeure event and a rationale for attributing the delay in testing beyond the regulatory deadline to the force majeure; describe the measures taken or to be taken to minimize the delay; and identify a date by which the owner or operator proposes to conduct the performance test. The performance test shall be conducted as soon as practicable after the force majeure occurs.

(3) The decision as to whether or not to grant an extension to the performance test deadline is solely within the discretion of the Administrator. The Administrator will notify the owner or operator in writing of approval or disapproval of the request for an extension as soon as practicable.

(4) Until an extension of the performance test deadline has been approved by the Administrator under paragraphs (a)(1), (2), and (3) of this section, the owner or operator of the affected facility remains strictly subject to the requirements of this part.

(b) Performance tests shall be conducted and data reduced in accordance with the test methods and procedures contained in each applicable subpart unless the Administrator (1) specifies or approves, in specific cases, the use of a reference method with minor changes in methodology, (2) approves the use of an equivalent method, (3) approves the use of an alternative method the results of which he has determined to be adequate for indicating whether a specific source is in compliance, (4) waives the requirement for performance tests because the owner or operator of a source has demonstrated by other means to the Administrator's satisfaction that the affected facility is in compliance with the standard, or (5) approves shorter sampling times and smaller sample volumes when necessitated by process variables or other factors. Nothing in this paragraph shall be construed to abrogate the Administrator's authority to require testing under section 114 of the Act.

(c) Performance tests shall be conducted under such conditions as the Administrator shall specify to the plant operator based on representative performance of the affected facility. The owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test nor shall emissions in excess of the level of the applicable emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.

(d) The owner or operator of an affected facility shall provide the Administrator at least 30 days prior notice of any performance test, except as specified under other subparts, to afford the Administrator the opportunity to have an observer present. If after 30 days notice for an initially scheduled performance test, there is a delay (due to

operational problems, etc.) in conducting the scheduled performance test, the owner or operator of an affected facility shall notify the Administrator (or delegated State or local agency) as soon as possible of any delay in the original test date, either by providing at least 7 days prior notice of the rescheduled date of the performance test, or by arranging a rescheduled date with the Administrator (or delegated State or local agency) by mutual agreement.

(e) The owner or operator of an affected facility shall provide, or cause to be provided, performance testing facilities as follows:

(1) Sampling ports adequate for test methods applicable to such facility. This includes (i) constructing the air pollution control system such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and procedures and (ii) providing a stack or duct free of cyclonic flow during performance tests, as demonstrated by applicable test methods and procedures.

(2) Safe sampling platform(s).

(3) Safe access to sampling platform(s).

(4) Utilities for sampling and testing equipment.

(f) Unless otherwise specified in the applicable subpart, each performance test shall consist of three separate runs using the applicable test method.

(1) Each run shall be conducted for the time and under the conditions specified in the applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic means of results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances, beyond the owner or operator's control, compliance may, upon the Administrator's approval, be determined using the arithmetic mean of the results of the two other runs.

(2) Contents of report (electronic or paper submitted copy). Unless otherwise specified in a relevant standard or test method, or as otherwise approved by the Administrator in writing, the report for a performance test shall include the elements identified in paragraphs (f)(2)(i) through (vi) of this section.

(i) General identification information for the facility including a mailing address, the physical address, the owner or operator or responsible official (where applicable) and his/her email address, and the appropriate Federal Registry System (FRS) number for the facility.

(ii) Purpose of the test including the applicable regulation(s) requiring the test, the pollutant(s) and other parameters being measured, the applicable emission standard and any process parameter component, and a brief process description.

(iii) Description of the emission unit tested including fuel burned, control devices, and vent characteristics; the appropriate source classification code (SCC); the permitted maximum process rate (where applicable); and the sampling location.

(iv) Description of sampling and analysis procedures used and any modifications to standard procedures, quality assurance procedures and results, record of process operating conditions that demonstrate the applicable test conditions are met, and values for any operating parameters for which limits were being set during the test.

(v) Where a test method requires you record or report, the following shall be included: Record of preparation of standards, record of calibrations, raw data sheets for field sampling, raw data sheets for

field and laboratory analyses, chain-of-custody documentation, and example calculations for reported results.

(vi) Identification of the company conducting the performance test including the primary office address, telephone number, and the contact for this test program including his/her email address.

(g) The performance testing shall include a test method performance audit (PA) during the performance test. The PAs consist of blind audit samples supplied by an accredited audit sample provider and analyzed during the performance test in order to provide a measure of test data bias. Gaseous audit samples are designed to audit the performance of the sampling system as well as the analytical system and must be collected by the sampling system during the compliance test just as the compliance samples are collected. If a liquid or solid audit sample is designed to audit the sampling system, it must also be collected by the sampling system during the compliance test. If multiple sampling systems or sampling trains are used during the compliance test for any of the test methods, the tester is only required to use one of the sampling systems per method to collect the audit sample. The auditsample must be analyzed by the same analyst using the same analytical reagents and analytical system and at the same time as the compliance samples. Retests are required when there is a failure to produce acceptable results for an audit sample. However, if the audit results do not affect the compliance or noncompliance status of the affected facility, the compliance authority may waive the reanalysis requirement, further audits, or retests and accept the results of the compliance test. Acceptance of the test results shall constitute a waiver of the reanalysis requirement, further audits, or retests. The compliance authority may also use the audit sample failure and the compliance test results as evidence to determine the compliance or noncompliance status of the affected facility. A blind audit sample is a sample whose value is known only to the sample provider and is not revealed to the tested facility until after they report the measured value of the audit sample. For pollutants that exist in the gas phase at ambient temperature, the audit sample shall consist of an appropriate concentration of the pollutant in air or nitrogen that can be introduced into the sampling system of the test method at or near the same entry point as a sample from the emission source. If no gas phase audit samples are available, an acceptable alternative is a sample of the pollutant in the same matrix that would be produced when the sample is recovered from the sampling system as required by the test method. For samples that exist only in a liquid or solid form at ambient temperature, the audit sample shall consist of an appropriate concentration of the pollutant in the same matrix that would be produced when the sample is recovered from the sampling system as required by the test method. An accredited audit sample provider (AASP) is an organization that has been accredited to prepare audit samples by an independent, third party accrediting body.

(1) The source owner, operator, or representative of the tested facility shall obtain an audit sample, if commercially available, from an AASP for each test method used for regulatory compliance purposes. No audit samples are required for the following test methods: Methods 3A and 3C of appendix A-3 of part 60, Methods 6C, 7E, 9, and 10 of appendix A-4 of part 60, Methods 18 and 19 of appendix A-6 of part 60, Methods 20, 22,and 25A of appendix A-7 of part 60, Methods 30A and 30B of appendix A-8 of part 60, and Methods 303, 318, 320, and 321 of appendix A of part 63 of this chapter. If multiple sources at a single facility are tested during a compliance test event, only one audit sample is required for each method used during a compliance test. The compliance authority responsible for the compliance test may waive the requirement to include an audit sample if they believe that an audit sample is not necessary. “Commercially available” means that two or more independent AASPs have blind audit samples available for purchase. If the source owner, operator, or representative cannot find an audit sample for a specific method, the owner, operator, or representative shall consult the EPA Web site at the following URL, *www.epa.gov/ttn/emc,* to confirm whether there is a source that can supply an audit sample for that method. If the EPA Web site does not list an available audit sample at least 60 days prior to the beginning of the compliance test, the source owner, operator, or representative shall not be required to include an audit sample as part of the quality assurance program for the compliance test. When ordering an audit sample, the source owner, operator, or representative shall give the sample provider an estimate for the concentration of each pollutant that is emitted by the source or the estimated concentration of

each pollutant based on the permitted level and the name, address, and phone number of the compliance authority. The source owner, operator, or representative shall report the results for the audit sample along with a summary of the emission test results for the audited pollutant to the compliance authority and shall report the results of the audit sample to the AASP. The source owner, operator, or representative shall make both reports at the same time and in the same manner or shall report to the compliance authority first and then report to the AASP. If the method being audited is a method that allows the samples to be analyzed in the field and the tester plans to analyze the samples in the field, the tester may analyze the audit samples prior to collecting the emission samples provided a representative of the compliance authority is present at the testing site. The tester may request and the compliance authority may grant a waiver to the requirement that a representative of the compliance authority must be present at the testing site during the field analysis of an audit sample. The source owner, operator, or representative may report the results of the audit sample to the compliance authority and report the results of the audit sample to the AASP prior to collecting any emission samples. The test protocol and final test report shall document whether an audit sample was ordered and utilized and the pass/fail results as applicable.

(2) An AASP shall have and shall prepare, analyze, and report the true value of audit samples in accordance with a written technical criteria document that describes how audit samples will be prepared and distributed in a manner that will ensure the integrity of the audit sample program. An acceptable technical criteria document shall contain standard operating procedures for all of the following operations:

(i) Preparing the sample;

(ii) Confirming the true concentration of the sample;

(iii) Defining the acceptance limits for the results from a well qualified tester. This procedure must use well established statistical methods to analyze historical results from well qualified testers. The acceptance limits shall be set so that there is 95 percent confidence that 90 percent of well qualified labs will produce future results that are within the acceptance limit range.

(iv) Providing the opportunity for the compliance authority to comment on the selected concentration level for an audit sample;

(v) Distributing the sample to the user in a manner that guarantees that the true value of the sample is unknown to the user;

(vi) Recording the measured concentration reported by the user and determining if the measured value is within acceptable limits;

(vii) The AASP shall report the results from each audit sample in a timely manner to the compliance authority and then to the source owner, operator, or representative. The AASP shall make both reports at the same time and in the same manner or shall report to the compliance authority first and then report to the source owner, operator, or representative. The results shall include the name of the facility tested, the date on which the compliance test was conducted, the name of the company performing the sample collection, the name of the company that analyzed the compliance samples including the audit sample, the measured result for the audit sample, and whether the testing company passed or failed the audit. The AASP shall report the true value of the audit sample to the compliance authority. The AASP may report the true value to the source owner, operator, or representative if the AASP's operating plan ensures that no laboratory will receive the same audit sample twice.

(viii) Evaluating the acceptance limits of samples at least once every two years to determine in cooperation with the voluntary consensus standard body if they should be changed;

(ix) Maintaining a database, accessible to the compliance authorities, of results from the audit that shall include the name of the facility tested, the date on which the compliance test was conducted, the name of the company performing the sample collection, the name of the company that analyzed the compliance samples including the audit sample, the measured result for the audit sample, the true value of the audit sample, the acceptance range for the measured value, and whether the testing company passed or failed the audit.

(3) The accrediting body shall have a written technical criteria document that describes how it will ensure that the AASP is operating in accordance with the AASP technical criteria document that describes how audit samples are to be prepared and distributed. This document shall contain standard operating procedures for all of the following operations:

(i) Checking audit samples to confirm their true value as reported by the AASP;

(ii) Performing technical systems audits of the AASP's facilities and operating procedures at least once every two years;

(iii) Providing standards for use by the voluntary consensus standard body to approve the accrediting body that will accredit the audit sample providers.

(4) The technical criteria documents for the accredited sample providers and the accrediting body shall be developed through a public process guided by a voluntary consensus standards body (VCSB). The VCSB shall operate in accordance with the procedures and requirements in the Office of Management and Budget Circular A-119. A copy of Circular A-119 is available upon request by writing the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW., Washington, DC 20503, by calling (202) 395-6880 or downloading online at *http://standards.gov/standards_gov/a119.cfm.* The VCSB shall approve all accrediting bodies. The Administrator will review all technical criteria documents. If the technical criteria documents do not meet the minimum technical requirements in paragraphs (g)(2) through (4) of this section, the technical criteria documents are not acceptable and the proposed audit sample program is not capable of producing audit samples of sufficient quality to be used in a compliance test. All acceptable technical criteria documents shall be posted on the EPA Web site at the following URL, *http://www.epa.gov/ttn/emc.*

(h) Unless otherwise specified in the applicable subpart, each test location must be verified to be free of cyclonic flow and evaluated for the existence of emission gas stratification and the required number of sampling traverse points. If other procedures are not specified in the applicable subpart to the regulations, use the appropriate procedures in Method 1 to check for cyclonic flow and Method 7E to evaluate emission gas stratification and selection of sampling points.

(i) Whenever the use of multiple calibration gases is required by a test method, performance specification, or quality assurance procedure in a part 60 standard or appendix, Method 205 of 40 CFR part 51, appendix M of this chapter, "Verification of Gas Dilution Systems for Field Instrument Calibrations," may be used.

§60.9 Availability of information.

The availability to the public of information provided to, or otherwise obtained by, the Administrator under this part shall be governed by part 2 of this chapter. (Information submitted voluntarily to the Administrator for the purposes of §§60.5 and 60.6 is governed by §§2.201 through 2.213 of this chapter and not by §2.301 of this chapter.)

§60.10 State authority.

The provisions of this part shall not be construed in any manner to preclude any State or political subdivision thereof from:

(a) Adopting and enforcing any emission standard or limitation applicable to an affected facility, provided that such emission standard or limitation is not less stringent than the standard applicable to such facility.

(b) Requiring the owner or operator of an affected facility to obtain permits, licenses, or approvals prior to initiating construction, modification, or operation of such facility.

§60.11 Compliance with standards and maintenance requirements.

(a) Compliance with standards in this part, other than opacity standards, shall be determined in accordance with performance tests established by §60.8, unless otherwise specified in the applicable standard.

(b) Compliance with opacity standards in this part shall be determined by conducting observations in accordance with Method 9 in appendix A of this part, any alternative method that is approved by the Administrator, or as provided in paragraph (e)(5) of this section. For purposes of determining initial compliance, the minimum total time of observations shall be 3 hours (30 6-minute averages) for the performance test or other set of observations (meaning those fugitive-type emission sources subject only to an opacity standard).

(c) The opacity standards set forth in this part shall apply at all times except during periods of startup, shutdown, malfunction, and as otherwise provided in the applicable standard.

(d) At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

(e)(1) For the purpose of demonstrating initial compliance, opacity observations shall be conducted concurrently with the initial performance test required in §60.8 unless one of the following conditions apply. If no performance test under §60.8 is required, then opacity observations shall be conducted within 60 days after achieving the maximum production rate at which the affected facility will be operated but no later than 180 days after initial startup of the facility. If visibility or other conditions prevent the opacity observations from being conducted concurrently with the initial performance test required under §60.8, the source owner or operator shall reschedule the opacity observations as soon after the initial performance test as possible, but not later than 30 days thereafter, and shall advise the Administrator of the rescheduled date. In these cases, the 30-day prior notification to the Administrator required in §60.7(a)(6) shall be waived. The rescheduled opacity observations shall be conducted (to the extent possible) under the same operating conditions that existed during the initial performance test conducted under §60.8. The visible emissions observer shall determine whether visibility or other conditions prevent the opacity observations from being made concurrently with the initial performance test in accordance with procedures contained in Method 9 of appendix B of this part. Opacity readings of portions of plumes which contain condensed, uncombined water vapor shall not be used for purposes of determing compliance with opacity standards. The owner or operator of an affected facility shall make available, upon request by the Administrator, such records as may be necessary to determine the conditions under which the visual observations were made and shall provide evidence indicating proof of current visible observer emission certification. Except as provided in paragraph (e)(5) of this section, the results of continuous monitoring by transmissometer which indicate that the opacity at the time visual observations were made was not in excess of the standard are probative but not conclusive evidence of the actual opacity of an emission, provided that the source shall meet the burden of proving that the instrument used meets (at the time of the alleged violation) Performance Specification 1 in appendix B of this part, has been properly maintained and (at the time of the alleged violation) that the resulting data have not been altered in any way.

(2) Except as provided in paragraph (e)(3) of this section, the owner or operator of an affected facility to which an opacity standard in this part applies shall conduct opacity observations in accordance with paragraph (b) of this section, shall record the opacity of emissions, and shall report to the Administrator the opacity results along with the results of the initial performance test required under §60.8. The inability of an owner or operator to

secure a visible emissions observer shall not be considered a reason for not conducting the opacity observations concurrent with the initial performance test.

(3) The owner or operator of an affected facility to which an opacity standard in this part applies may request the Administrator to determine and to record the opacity of emissions from the affected facility during the initial performance test and at such times as may be required. The owner or operator of the affected facility shall report the opacity results. Any request to the Administrator to determine and to record the opacity of emissions from an affected facility shall be included in the notification required in §60.7(a)(6). If, for some reason, the Administrator cannot determine and record the opacity of emissions from the affected facility during the performance test, then the provisions of paragraph (e)(1) of this section shall apply.

(4) An owner or operator of an affected facility using a continuous opacity monitor (transmissometer) shall record the monitoring data produced during the initial performance test required by §60.8 and shall furnish the Administrator a written report of the monitoring results along with Method 9 and §60.8 performance test results.

(5) An owner or operator of an affected facility subject to an opacity standard may submit, for compliance purposes, continuous opacity monitoring system (COMS) data results produced during any performance test required under §60.8 in lieu of Method 9 observation data. If an owner or operator elects to submit COMS data for compliance with the opacity standard, he shall notify the Administrator of that decision, in writing, at least 30 days before any performance test required under §60.8 is conducted. Once the owner or operator of an affected facility has notified the Administrator to that effect, the COMS data results will be used to determine opacity compliance during subsequent tests required under §60.8 until the owner or operator notifies the Administrator, in writing, to the contrary. For the purpose of determining compliance with the opacity standard during a performance test required under §60.8 using COMS data, the minimum total time of COMS data collection shall be averages of all 6-minute continuous periods within the duration of the mass emission performance test. Results of the COMS opacity determinations shall be submitted along with the results of the performance test required under §60.8. The owner or operator of an affected facility using a COMS for compliance purposes is responsible for demonstrating that the COMS meets the requirements specified in §60.13(c) of this part, that the COMS has been properly maintained and operated, and that the resulting data have not been altered in any way. If COMS data results are submitted for compliance with the opacity standard for a period of time during which Method 9 data indicates noncompliance, the Method 9 data will be used to determine compliance with the opacity standard.

(6) Upon receipt from an owner or operator of the written reports of the results of the performance tests required by §60.8, the opacity observation results and observer certification required by §60.11(e)(1), and the COMS results, if applicable, the Administrator will make a finding concerning compliance with opacity and other applicable standards. If COMS data results are used to comply with an opacity standard, only those results are required to be submitted along with the performance test results required by §60.8. If the Administrator finds that an affected facility is in compliance with all applicable standards for which performance tests are conducted in accordance with §60.8 of this part but during the time such performance tests are being conducted fails to meet any applicable opacity standard, he shall notify the owner or operator and advise him that he may petition the Administrator within 10 days of receipt of notification to make appropriate adjustment to the opacity standard for the affected facility.

(7) The Administrator will grant such a petition upon a demonstration by the owner or operator that the affected facility and associated air pollution control equipment was operated and maintained in a manner to minimize the opacity of emissions during the performance tests; that the performance tests were performed under the conditions established by the Administrator; and that the affected facility and associated air pollution control equipment were incapable of being adjusted or operated to meet the applicable opacity standard.

(8) The Administrator will establish an opacity standard for the affected facility meeting the above requirements at a level at which the source will be able, as indicated by the performance and opacity tests, to meet the opacity standard at all times during which the source is meeting the mass or concentration emission standard. The Administrator will promulgate the new opacity standard in the FEDERAL REGISTER.

(f) Special provisions set forth under an applicable subpart shall supersede any conflicting provisions in paragraphs (a) through (e) of this section.

(g) For the purpose of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any standard in this part, nothing in this part shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.

§60.12 Circumvention.

No owner or operator subject to the provisions of this part shall build, erect, install, or use any article, machine, equipment or process, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere.

§60.13 Monitoring requirements.

(a) For the purposes of this section, all continuous monitoring systems required under applicable subparts shall be subject to the provisions of this section upon promulgation of performance specifications for continuous monitoring systems under appendix B to this part and, if the continuous monitoring system is used to demonstrate compliance with emission limits on a continuous basis, appendix F to this part, unless otherwise specified in an applicable subpart or by the Administrator. Appendix F is applicable December 4, 1987.

(b) All continuous monitoring systems and monitoring devices shall be installed and operational prior to conducting performance tests under §60.8. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of the device.

(c) If the owner or operator of an affected facility elects to submit continous opacity monitoring system (COMS) data for compliance with the opacity standard as provided under §60.11(e)(5), he shall conduct a performance evaluation of the COMS as specified in Performance Specification 1, appendix B, of this part before the performance test required under §60.8 is conducted. Otherwise, the owner or operator of an affected facility shall conduct a performance evaluation of the COMS or continuous emission monitoring system (CEMS) during any performance test required under §60.8 or within 30 days thereafter in accordance with the applicable performance specification in appendix B of this part, The owner or operator of an affected facility shall conduct COMS or CEMS performance evaluations at such other times as may be required by the Administrator under section 114 of the Act.

(1) The owner or operator of an affected facility using a COMS to determine opacity compliance during any performance test required under §60.8 and as described in §60.11(e)(5) shall furnish the Administrator two or, upon request, more copies of a written report of the results of the COMS performance evaluation described in paragraph (c) of this section at least 10 days before the performance test required under §60.8 is conducted.

(2) Except as provided in paragraph (c)(1) of this section, the owner or operator of an affected facility shall furnish the Administrator within 60 days of completion two or, upon request, more copies of a written report of the results of the performance evaluation.

(d)(1) Owners and operators of a CEMS installed in accordance with the provisions of this part, must check the zero (or low level value between 0 and 20 percent of span value) and span (50 to 100 percent of span value) calibration drifts at least once each operating day in accordance with a written procedure. The zero and span must, at a minimum, be adjusted whenever either the 24-hour zero drift or the 24-hour span drift exceeds two times the limit

of the applicable performance specification in appendix B of this part. The system must allow the amount of the excess zero and span drift to be recorded and quantified whenever specified. Owners and operators of a COMS installed in accordance with the provisions of this part must check the zero and upscale (span) calibration drifts at least once daily. For a particular COMS, the acceptable range of zero and upscale calibration materials is defined in the applicable version of PS-1 in appendix B of this part. For a COMS, the optical surfaces, exposed to the effluent gases, must be cleaned before performing the zero and upscale drift adjustments, except for systems using automatic zero adjustments. The optical surfaces must be cleaned when the cumulative automatic zero compensation exceeds 4 percent opacity.

(2) Unless otherwise approved by the Administrator, the following procedures must be followed for a COMS. Minimum procedures must include an automated method for producing a simulated zero opacity condition and an upscale opacity condition using a certified neutral density filter or other related technique to produce a known obstruction of the light beam. Such procedures must provide a system check of all active analyzer internal optics with power or curvature, all active electronic circuitry including the light source and photodetector assembly, and electronic or electro-mechanical systems and hardware and or software used during normal measurement operation.

(e) Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required under paragraph (d) of this section, all continuous monitoring systems shall be in continuous operation and shall meet minimum frequency of operation requirements as follows:

(1) All continuous monitoring systems referenced by paragraph (c) of this section for measuring opacity of emissions shall complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period.

(2) All continuous monitoring systems referenced by paragraph (c) of this section for measuring emissions, except opacity, shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.

(f) All continuous monitoring systems or monitoring devices shall be installed such that representative measurements of emissions or process parameters from the affected facility are obtained. Additional procedures for location of continuous monitoring systems contained in the applicable Performance Specifications of appendix B of this part shall be used.

(g) When the effluents from a single affected facility or two or more affected facilities subject to the same emission standards are combined before being released to the atmosphere, the owner or operator may install applicable continuous monitoring systems on each effluent or on the combined effluent. When the affected facilities are not subject to the same emission standards, separate continuous monitoring systems shall be installed on each effluent. When the effluent from one affected facility is released to the atmosphere through more than one point, the owner or operator shall install an applicable continuous monitoring system on each separate effluent unless the installation of fewer systems is approved by the Administrator. When more than one continuous monitoring system is used to measure the emissions from one affected facility (e.g., multiple breechings, multiple outlets), the owner or operator shall report the results as required from each continuous monitoring system.

(h)(1) Owners or operators of all continuous monitoring systems for measurement of opacity shall reduce all data to 6-minute averages and for continuous monitoring systems other than opacity to 1-hour averages for time periods as defined in §60.2. Six-minute opacity averages shall be calculated from 36 or more data points equally spaced over each 6-minute period.

(2) For continuous monitoring systems other than opacity, 1-hour averages shall be computed as follows, except that the provisions pertaining to the validation of partial operating hours are only applicable for affected facilities that are required by the applicable subpart to include partial hours in the emission calculations:

(i) Except as provided under paragraph (h)(2)(iii) of this section, for a full operating hour (any clock hour with 60 minutes of unit operation), at least four valid data points are required to calculate the hourly average, *i.e.*, one data point in each of the 15-minute quadrants of the hour.

(ii) Except as provided under paragraph (h)(2)(iii) of this section, for a partial operating hour (any clock hour with less than 60 minutes of unit operation), at least one valid data point in each 15-minute quadrant of the hour in which the unit operates is required to calculate the hourly average.

(iii) For any operating hour in which required maintenance or quality-assurance activities are performed:

(A) If the unit operates in two or more quadrants of the hour, a minimum of two valid data points, separated by at least 15 minutes, is required to calculate the hourly average; or

(B) If the unit operates in only one quadrant of the hour, at least one valid data point is required to calculate the hourly average.

(iv) If a daily calibration error check is failed during any operating hour, all data for that hour shall be invalidated, unless a subsequent calibration error test is passed in the same hour and the requirements of paragraph (h)(2)(iii) of this section are met, based solely on valid data recorded after the successful calibration.

(v) For each full or partial operating hour, all valid data points shall be used to calculate the hourly average.

(vi) Except as provided under paragraph (h)(2)(vii) of this section, data recorded during periods of continuous monitoring system breakdown, repair, calibration checks, and zero and span adjustments shall not be included in the data averages computed under this paragraph.

(vii) Owners and operators complying with the requirements of §60.7(f)(1) or (2) must include any data recorded during periods of monitor breakdown or malfunction in the data averages.

(viii) When specified in an applicable subpart, hourly averages for certain partial operating hours shall not be computed or included in the emission averages (e.g., hours with < 30 minutes of unit operation under §60.47b(d)).

(ix) Either arithmetic or integrated averaging of all data may be used to calculate the hourly averages. The data may be recorded in reduced or nonreduced form (e.g., ppm pollutant and percent O_2 or ng/J of pollutant).

(3) All excess emissions shall be converted into units of the standard using the applicable conversion procedures specified in the applicable subpart. After conversion into units of the standard, the data may be rounded to the same number of significant digits used in the applicable subpart to specify the emission limit.

(i) After receipt and consideration of written application, the Administrator may approve alternatives to any monitoring procedures or requirements of this part including, but not limited to the following:

(1) Alternative monitoring requirements when installation of a continuous monitoring system or monitoring device specified by this part would not provide accurate measurements due to liquid water or other interferences caused by substances in the effluent gases.

(2) Alternative monitoring requirements when the affected facility is infrequently operated.

(3) Alternative monitoring requirements to accommodate continuous monitoring systems that require additional measurements to correct for stack moisture conditions.

(4) Alternative locations for installing continuous monitoring systems or monitoring devices when the owner or operator can demonstrate that installation at alternate locations will enable accurate and representative measurements.

(5) Alternative methods of converting pollutant concentration measurements to units of the standards.

(6) Alternative procedures for performing daily checks of zero and span drift that do not involve use of span gases or test cells.

(7) Alternatives to the A.S.T.M. test methods or sampling procedures specified by any subpart.

(8) Alternative continuous monitoring systems that do not meet the design or performance requirements in Performance Specification 1, appendix B, but adequately demonstrate a definite and consistent relationship between its measurements and the measurements of opacity by a system complying with the requirements in Performance Specification 1. The Administrator may require that such demonstration be performed for each affected facility.

(9) Alternative monitoring requirements when the effluent from a single affected facility or the combined effluent from two or more affected facilities is released to the atmosphere through more than one point.

(j) An alternative to the relative accuracy (RA) test specified in Performance Specification 2 of appendix B may be requested as follows:

(1) An alternative to the reference method tests for determining RA is available for sources with emission rates demonstrated to be less than 50 percent of the applicable standard. A source owner or operator may petition the Administrator to waive the RA test in Section 8.4 of Performance Specification 2 and substitute the procedures in Section 16.0 if the results of a performance test conducted according to the requirements in §60.8 of this subpart or other tests performed following the criteria in §60.8 demonstrate that the emission rate of the pollutant of interest in the units of the applicable standard is less than 50 percent of the applicable standard. For sources subject to standards expressed as control efficiency levels, a source owner or operator may petition the Administrator to waive the RA test and substitute the procedures in Section 16.0 of Performance Specification 2 if the control device exhaust emission rate is less than 50 percent of the level needed to meet the control efficiency requirement. The alternative procedures do not apply if the continuous emission monitoring system is used to determine compliance continuously with the applicable standard. The petition to waive the RA test shall include a detailed description of the procedures to be applied. Included shall be location and procedure for conducting the alternative, the concentration or response levels of the alternative RA materials, and the other equipment checks included in the alternative procedure. The Administrator will review the petition for completeness and applicability. The determination to grant a waiver will depend on the intended use of the CEMS data (e.g., data collection purposes other than NSPS) and may require specifications more stringent than in Performance Specification 2 (e.g., the applicable emission limit is more stringent than NSPS).

(2) The waiver of a CEMS RA test will be reviewed and may be rescinded at such time, following successful completion of the alternative RA procedure, that the CEMS data indicate that the source emissions are approaching the level. The criterion for reviewing the waiver is the collection of CEMS data showing that emissions have exceeded 70 percent of the applicable standard for seven, consecutive, averaging periods as specified by the applicable regulation(s). For sources subject to standards expressed as control efficiency levels, the criterion for reviewing the waiver is the collection of CEMS data showing that exhaust emissions have exceeded 70 percent of the level needed to meet the control efficiency requirement for seven, consecutive, averaging periods as specified by the applicable regulation(s) [e.g., §§60.45(g) (2) and (3), 60.73(e), and 60.84(e)]. It is the responsibility of the source operator to maintain records and determine the level of emissions relative to the criterion on the waiver of RA testing. If this criterion is exceeded, the owner or operator must notify the Administrator within 10 days of such occurrence and include a description of the nature and cause of

the increasing emissions. The Administrator will review the notification and may rescind the waiver and require the owner or operator to conduct a RA test of the CEMS as specified in Section 8.4 of Performance Specification 2.

§60.14 Modification.

(a) Except as provided under paragraphs (e) and (f) of this section, any physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies shall be considered a modification within the meaning of section 111 of the Act. Upon modification, an existing facility shall become an affected facility for each pollutant to which a standard applies and for which there is an increase in the emission rate to the atmosphere.

(b) Emission rate shall be expressed as kg/hr of any pollutant discharged into the atmosphere for which a standard is applicable. The Administrator shall use the following to determine emission rate:

(1) Emission factors as specified in the latest issue of "Compilation of Air Pollutant Emission Factors," EPA Publication No. AP-42, or other emission factors determined by the Administrator to be superior to AP-42 emission factors, in cases where utilization of emission factors demonstrates that the emission level resulting from the physical or operational change will either clearly increase or clearly not increase.

(2) Material balances, continuous monitor data, or manual emission tests in cases where utilization of emission factors as referenced in paragraph (b)(1) of this section does not demonstrate to the Administrator's satisfaction whether the emission level resulting from the physical or operational change will either clearly increase or clearly not increase, or where an owner or operator demonstrates to the Administrator's satisfaction that there are reasonable grounds to dispute the result obtained by the Administrator utilizing emission factors as referenced in paragraph (b)(1) of this section. When the emission rate is based on results from manual emission tests or continuous monitoring systems, the procedures specified in appendix C of this part shall be used to determine whether an increase in emission rate has occurred. Tests shall be conducted under such conditions as the Administrator shall specify to the owner or operator based on representative performance of the facility. At least three valid test runs must be conducted before and at least three after the physical or operational change. All operating parameters which may affect emissions must be held constant to the maximum feasible degree for all test runs.

(c) The addition of an affected facility to a stationary source as an expansion to that source or as a replacement for an existing facility shall not by itself bring within the applicability of this part any other facility within that source.

(d) [Reserved]

(e) The following shall not, by themselves, be considered modifications under this part:

(1) Maintenance, repair, and replacement which the Administrator determines to be routine for a source category, subject to the provisions of paragraph (c) of this section and §60.15.

(2) An increase in production rate of an existing facility, if that increase can be accomplished without a capital expenditure on that facility.

(3) An increase in the hours of operation.

(4) Use of an alternative fuel or raw material if, prior to the date any standard under this part becomes applicable to that source type, as provided by §60.1, the existing facility was designed to accommodate that alternative use. A facility shall be considered to be designed to accommodate an alternative fuel or raw material if that use could be accomplished under the facility's construction specifications as amended prior to the change. Conversion to coal required for energy considerations, as specified in section 111(a)(8) of the Act, shall not be considered a modification.

(5) The addition or use of any system or device whose primary function is the reduction of air pollutants, except when an emission control system is removed or is replaced by a system which the Administrator determines to be less environmentally beneficial.

(6) The relocation or change in ownership of an existing facility.

(f) Special provisions set forth under an applicable subpart of this part shall supersede any conflicting provisions of this section.

(g) Within 180 days of the completion of any physical or operational change subject to the control measures specified in paragraph (a) of this section, compliance with all applicable standards must be achieved.

(h) No physical change, or change in the method of operation, at an existing electric utility steam generating unit shall be treated as a modification for the purposes of this section provided that such change does not increase the maximum hourly emissions of any pollutant regulated under this section above the maximum hourly emissions achievable at that unit during the 5 years prior to the change.

(i) Repowering projects that are awarded funding from the Department of Energy as permanent clean coal technology demonstration projects (or similar projects funded by EPA) are exempt from the requirements of this section provided that such change does not increase the maximum hourly emissions of any pollutant regulated under this section above the maximum hourly emissions achievable at that unit during the five years prior to the change.

(j)(1) Repowering projects that qualify for an extension under section 409(b) of the Clean Air Act are exempt from the requirements of this section, provided that such change does not increase the actual hourly emissions of any pollutant regulated under this section above the actual hourly emissions achievable at that unit during the 5 years prior to the change.

(2) This exemption shall not apply to any new unit that:

(i) Is designated as a replacement for an existing unit;

(ii) Qualifies under section 409(b) of the Clean Air Act for an extension of an emission limitation compliance date under section 405 of the Clean Air Act; and

(iii) Is located at a different site than the existing unit.

(k) The installation, operation, cessation, or removal of a temporary clean coal technology demonstration project is exempt from the requirements of this section. A *temporary clean coal control technology demonstration project,* for the purposes of this section is a clean coal technology demonstration project that is operated for a period of 5 years or less, and which complies with the State implementation plan for the State in which the project is located and other requirements necessary to attain and maintain the national ambient air quality standards during the project and after it is terminated.

(l) The reactivation of a very clean coal-fired electric utility steam generating unit is exempt from the requirements of this section.

§60.15 Reconstruction.

(a) An existing facility, upon reconstruction, becomes an affected facility, irrespective of any change in emission rate.

(b) "Reconstruction" means the replacement of components of an existing facility to such an extent that:

(1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, and

(2) It is technologically and economically feasible to meet the applicable standards set forth in this part.

(c) "Fixed capital cost" means the capital needed to provide all the depreciable components.

(d) If an owner or operator of an existing facility proposes to replace components, and the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, he shall notify the Administrator of the proposed replacements. The notice must be postmarked 60 days (or as soon as practicable) before construction of the replacements is commenced and must include the following information:

(1) Name and address of the owner or operator.

(2) The location of the existing facility.

(3) A brief description of the existing facility and the components which are to be replaced.

(4) A description of the existing air pollution control equipment and the proposed air pollution control equipment.

(5) An estimate of the fixed capital cost of the replacements and of constructing a comparable entirely new facility.

(6) The estimated life of the existing facility after the replacements.

(7) A discussion of any economic or technical limitations the facility may have in complying with the applicable standards of performance after the proposed replacements.

(e) The Administrator will determine, within 30 days of the receipt of the notice required by paragraph (d) of this section and any additional information he may reasonably require, whether the proposed replacement constitutes reconstruction.

(f) The Administrator's determination under paragraph (e) shall be based on:

(1) The fixed capital cost of the replacements in comparison to the fixed capital cost that would be required to construct a comparable entirely new facility;

(2) The estimated life of the facility after the replacements compared to the life of a comparable entirely new facility;

(3) The extent to which the components being replaced cause or contribute to the emissions from the facility; and

(4) Any economic or technical limitations on compliance with applicable standards of performance which are inherent in the proposed replacements.

(g) Individual subparts of this part may include specific provisions which refine and delimit the concept of reconstruction set forth in this section.

§60.16 Priority list.

Prioritized Major Source Categories

Priority Number[1]	***Source Category***
1.	Synthetic Organic Chemical Manufacturing Industry (SOCMI) and Volatile Organic Liquid Storage Vessels and Handling Equipment
	(a) SOCMI unit processes
	(b) Volatile organic liquid (VOL) storage vessels and handling equipment

	(c) SOCMI fugitive sources
	(d) SOCMI secondary sources
2.	Industrial Surface Coating: Cans
3.	Petroleum Refineries: Fugitive Sources
4.	Industrial Surface Coating: Paper
5.	Dry Cleaning
	(a) Perchloroethylene
	(b) Petroleum solvent
6.	Graphic Arts
7.	Polymers and Resins: Acrylic Resins
8.	Mineral Wool (Deleted)
9.	Stationary Internal Combustion Engines
10.	Industrial Surface Coating: Fabric
11.	Industrial-Commercial-Institutional Steam Generating Units.
12.	Incineration: Non-Municipal (Deleted)
13.	Non-Metallic Mineral Processing
14.	Metallic Mineral Processing
15.	Secondary Copper (Deleted)
16.	Phosphate Rock Preparation
17.	Foundries: Steel and Gray Iron
18.	Polymers and Resins: Polyethylene
19.	Charcoal Production
20.	Synthetic Rubber
	(a) Tire manufacture
	(b) SBR production
21.	Vegetable Oil
22.	Industrial Surface Coating: Metal Coil
23.	Petroleum Transportation and Marketing
24.	By-Product Coke Ovens

25.	Synthetic Fibers
26.	Plywood Manufacture
27.	Industrial Surface Coating: Automobiles
28.	Industrial Surface Coating: Large Appliances
29.	Crude Oil and Natural Gas Production
30.	Secondary Aluminum
31.	Potash (Deleted)
32.	Lightweight Aggregate Industry: Clay, Shale, and Slate[2]
33.	Glass
34.	Gypsum
35.	Sodium Carbonate
36.	Secondary Zinc (Deleted)
37.	Polymers and Resins: Phenolic
38.	Polymers and Resins: Urea-Melamine
39.	Ammonia (Deleted)
40.	Polymers and Resins: Polystyrene
41.	Polymers and Resins: ABS-SAN Resins
42.	Fiberglass
43.	Polymers and Resins: Polypropylene
44.	Textile Processing
45.	Asphalt Processing and Asphalt Roofing Manufacture
46.	Brick and Related Clay Products
47.	Ceramic Clay Manufacturing (Deleted)
48.	Ammonium Nitrate Fertilizer
49.	Castable Refractories (Deleted)
50.	Borax and Boric Acid (Deleted)
51.	Polymers and Resins: Polyester Resins
52.	Ammonium Sulfate
53.	Starch

54.	Perlite
55.	Phosphoric Acid: Thermal Process (Deleted)
56.	Uranium Refining
57.	Animal Feed Defluorination (Deleted)
58.	Urea (for fertilizer and polymers)
59.	Detergent (Deleted)
Other Source Categories	
Lead acid battery manufacture[3]	
Organic solvent cleaning[3]	
Industrial surface coating: metal furniture[3]	
Stationary gas turbines[4]	
Municipal solid waste landfills[4]	

[1]Low numbers have highest priority, e.g., No. 1 is high priority, No. 59 is low priority.

[2]Formerly titled "Sintering: Clay and Fly Ash".

[3]Minor source category, but included on list since an NSPS is being developed for that source category.

[4]Not prioritized, since an NSPS for this major source category has already been promulgated.

§60.17 Incorporations by reference.

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the EPA must publish notice of change in the FEDERAL REGISTER and the material must be available to the public. All approved material is available for inspection at the EPA Docket Center, Public Reading Room, EPA WJC West, Room 3334, 1301 Constitution Ave. NW., Washington, DC, telephone number 202-566-1744, and is available from the sources listed below. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030 or go to *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.*

(b) American Gas Association, available through ILI Infodisk, 610 Winters Avenue, Paramus, New Jersey 07652:

(1) American Gas Association Report No. 3: Orifice Metering for Natural Gas and Other Related Hydrocarbon Fluids, Part 1: General Equations and Uncertainty Guidelines (1990), IBR approved for §60.107a(d).

(2) American Gas Association Report No. 3: Orifice Metering for Natural Gas and Other Related Hydrocarbon Fluids, Part 2: Specification and Installation Requirements (2000), IBR approved for §60.107a(d).

(3) American Gas Association Report No. 11: Measurement of Natural Gas by Coriolis Meter (2003), IBR approved for §60.107a(d).

(4) American Gas Association Transmission Measurement Committee Report No. 7: Measurement of Gas by Turbine Meters (Revised February 2006), IBR approved for §60.107a(d).

(c) American Hospital Association (AHA) Service, Inc., Post Office Box 92683, Chicago, Illinois 60675-2683. You may inspect a copy at the EPA's Air and Radiation Docket and Information Center (Docket A-91-61, Item IV-J-124), Room M-1500, 1200 Pennsylvania Ave. NW., Washington, DC 20460.

(1) An Ounce of Prevention: Waste Reduction Strategies for Health Care Facilities. American Society for Health Care Environmental Services of the American Hospital Association. Chicago, Illinois. 1993. AHA Catalog No. 057007. ISBN 0-87258-673-5. IBR approved for §§60.35e and 60.55c.

(2) [Reserved]

(d) The following material is available for purchase from the American National Standards Institute (ANSI), 25 W. 43rd Street, 4th Floor, New York, NY 10036, Telephone (212) 642-4980, and is also available at the following Web site: *http://www.ansi.org*.

(1) ANSI No. C12.20-2010 American National Standard for Electricity Meters—0.2 and 0.5 Accuracy Classes (Approved August 31, 2010), IBR approved for §60.5535(d).

(2) [Reserved]

(e) American Petroleum Institute (API), 1220 L Street NW., Washington, DC 20005.

(1) API Publication 2517, Evaporation Loss from External Floating Roof Tanks, Second Edition, February 1980, IBR approved for §§60.111(i), 60.111a(f), and 60.116b(e).

(2) API Manual of Petroleum Measurement Standards, Chapter 22—Testing Protocol, Section 2—Differential Pressure Flow Measurement Devices, First Edition, August 2005, IBR approved for §60.107a(d).

(f) American Public Health Association, 1015 18th Street NW., Washington, DC 20036.

(1) "Standard Methods for the Examination of Water and Wastewater," 16th edition, 1985. Method 303F: "Determination of Mercury by the Cold Vapor Technique." Incorporated by reference for appendix A-8 to part 60, Method 29, §§9.2.3, 10.3, and 11.1.3.

(2) 2540 G. Total, Fixed, and Volatile Solids in Solid and Semisolid Samples, in Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998, IBR approved for §60.154(b).

(g) The following material is available for purchase from the American Society of Mechanical Engineers (ASME), Two Park Avenue, New York, NY 10016-5990, Telephone (800) 843-2763, and is also available at the following Web site: *http://www.asme.org.*

(1) ASME Interim Supplement 19.5 on Instruments and Apparatus: Application, Part II of Fluid Meters, 6th Edition (1971), IBR approved for §§60.58a(h), 60.58b(i), 60.1320(a), and 60.1810(a).

(2) ASME MFC-3M-2004, Measurement of Fluid Flow in Pipes Using Orifice, Nozzle, and Venturi, IBR approved for §60.107a(d).

(3) ASME/ANSI MFC-4M-1986 (Reaffirmed 2008), Measurement of Gas Flow by Turbine Meters, IBR approved for §60.107a(d).

(4) ASME/ANSI MFC-5M-1985 (Reaffirmed 2006), Measurement of Liquid Flow in Closed Conduits Using Transit-Time Ultrasonic Flowmeters, IBR approved for §60.107a(d).

(5) ASME MFC-6M-1998 (Reaffirmed 2005), Measurement of Fluid Flow in Pipes Using Vortex Flowmeters, IBR approved for §60.107a(d).

(6) ASME/ANSI MFC-7M-1987 (Reaffirmed 2006), Measurement of Gas Flow by Means of Critical Flow Venturi Nozzles, IBR approved for §60.107a(d).

(7) ASME/ANSI MFC-9M-1988 (Reaffirmed 2006), Measurement of Liquid Flow in Closed Conduits by Weighing Method, IBR approved for §60.107a(d).

(8) ASME MFC-11M-2006, Measurement of Fluid Flow by Means of Coriolis Mass Flowmeters, IBR approved for §60.107a(d).

(9) ASME MFC-14M-2003, Measurement of Fluid Flow Using Small Bore Precision Orifice Meters, IBR approved for §60.107a(d).

(10) ASME MFC-16-2007, Measurement of Liquid Flow in Closed Conduits with Electromagnetic Flowmeters, IBR approved for §60.107a(d).

(11) ASME MFC-18M-2001, Measurement of Fluid Flow Using Variable Area Meters, IBR approved for §60.107a(d).

(12) ASME MFC-22-2007, Measurement of Liquid by Turbine Flowmeters, IBR approved for §60.107a(d).

(13) ASME PTC 4.1-1964 (Reaffirmed 1991), Power Test Codes: Test Code for Steam Generating Units (with 1968 and 1969 Addenda), IBR approved for §§60.46b, 60.58a(h), 60.58b(i), 60.1320(a), and 60.1810(a).

(14) ASME/ANSI PTC 19.10-1981, Flue and Exhaust Gas Analyses [Part 10, Instruments and Apparatus], (Issued August 31, 1981), IBR approved for §§60.56c(b), 60.63(f), 60.106(e), 60.104a(d), (h), (i), and (j), 60.105a(d), (f), and (g), §60.106a(a), §60.107a(a), (c), and (d), tables 1 and 3 to subpart EEEE, tables 2 and 4 to subpart FFFF, table 2 to subpart JJJJ, §60.285a(f), §§60.4415(a), 60.2145(s) and (t), 60.2710(s), (t), and (w), 60.2730(q), 60.4900(b), 60.5220(b), tables 1 and 2 to subpart LLLL, tables 2 and 3 to subpart MMMM, 60.5406(c), 60.5406a(c), 60.5407a(g), 60.5413(b), 60.5413a(b) and 60.5413a(d).

(15) ASME PTC 22-2014, Gas Turbines: Performance Test Codes, (Issued December 31, 2014), IBR approved for §60.5580.

(16) ASME PTC 46-1996, Performance Test Code on Overall Plant Performance, (Issued October 15, 1997), IBR approved for §60.5580.

(17) ASME QRO-1-1994, Standard for the Qualification and Certification of Resource Recovery Facility Operators, IBR approved for §§60.54b(a) and (b), 60.56a, 60.1185(a) and (c), and 60.1675(a) and (c).

(h) The following material is available for purchase from ASTM International, 100 Barr Harbor Drive, P.O. Box CB700, West Conshohocken, Pennsylvania 19428-2959, (800) 262-1373, *http://www.astm.org.*

(1) ASTM A99-76, Standard Specification for Ferromanganese, IBR approved for §60.261.

(2) ASTM A99-82 (Reapproved 1987), Standard Specification for Ferromanganese, IBR approved for §60.261.

(3) ASTM A100-69, Standard Specification for Ferrosilicon, IBR approved for §60.261.

(4) ASTM A100-74, Standard Specification for Ferrosilicon, IBR approved for §60.261.

(5) ASTM A100-93, Standard Specification for Ferrosilicon, IBR approved for §60.261.

(6) ASTM A101-73, Standard Specification for Ferrochromium, IBR approved for §60.261.

(7) ASTM A101-93, Standard Specification for Ferrochromium, IBR approved for §60.261.

(8) ASTM A482-76, Standard Specification for Ferrochromesilicon, IBR approved for §60.261.

(9) ASTM A482-93, Standard Specification for Ferrochromesilicon, IBR approved for §60.261.

(10) ASTM A483-64, Standard Specification for Silicomanganese, IBR approved for §60.261.

(11) ASTM A483-74 (Reapproved 1988), Standard Specification for Silicomanganese, IBR approved for §60.261.

(12) ASTM A495-76, Standard Specification for Calcium-Silicon and Calcium Manganese-Silicon, IBR approved for §60.261.

(13) ASTM A495-94, Standard Specification for Calcium-Silicon and Calcium Manganese-Silicon, IBR approved for §60.261.

(14) ASTM D86-78, Distillation of Petroleum Products, IBR approved for §§60.562-2(d), 60.593(d), 60.593a(d), 60.633(h).

(15) ASTM D86-82, Distillation of Petroleum Products, IBR approved for §§60.562-2(d), 60.593(d), 60.593a(d), 60.633(h).

(16) ASTM D86-90, Distillation of Petroleum Products, IBR approved for §§60.562-2(d), 60.593(d), 60.593a(d), 60.633(h).

(17) ASTM D86-93, Distillation of Petroleum Products, IBR approved for §§60.562-2(d), 60.593(d), 60.593a(d), 60.633(h).

(18) ASTM D86-95, Distillation of Petroleum Products, IBR approved for §§60.562-2(d), 60.593(d), 60.593a(d), 60.633(h).

(19) ASTM D86-96, Distillation of Petroleum Products, (Approved April 10, 1996), IBR approved for §§60.562-2(d), 60.593(d), 60.593a(d), 60.633(h), 60.5401(f), 60.5401a(f).

(20) ASTM D129-64, Standard Test Method for Sulfur in Petroleum Products (General Bomb Method), IBR approved for §§60.106(j) and appendix A-7 to part 60: Method 19, Section 12.5.2.2.3.

(21) ASTM D129-78, Standard Test Method for Sulfur in Petroleum Products (General Bomb Method), IBR approved for §§60.106(j) and appendix A-7 to part 60: Method 19, Section 12.5.2.2.3.

(22) ASTM D129-95, Standard Test Method for Sulfur in Petroleum Products (General Bomb Method), IBR approved for §§60.106(j) and appendix A-7 to part 60: Method 19, Section 12.5.2.2.3.

(23) ASTM D129-00, Standard Test Method for Sulfur in Petroleum Products (General Bomb Method), IBR approved for §60.335(b).

(24) ASTM D129-00 (Reapproved 2005), Standard Test Method for Sulfur in Petroleum Products (General Bomb Method), IBR approved for §60.4415(a).

(25) ASTM D240-76, Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter, IBR approved for §§60.46(c), 60.296(b), and appendix A-7 to part 60: Method 19, Section 12.5.2.2.3.

(26) ASTM D240-92, Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter, IBR approved for §§60.46(c), 60.296(b), and appendix A-7: Method 19, Section 12.5.2.2.3.

(27) ASTM D240-02 (Reapproved 2007), Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter, (Approved May 1, 2007), IBR approved for §60.107a(d).

(28) ASTM D270-65, Standard Method of Sampling Petroleum and Petroleum Products, IBR approved for appendix A-7 to part 60: Method 19, Section 12.5.2.2.1.

(29) ASTM D270-75, Standard Method of Sampling Petroleum and Petroleum Products, IBR approved for appendix A-7 to part 60: Method 19, Section 12.5.2.2.1.

(30) ASTM D323-82, Test Method for Vapor Pressure of Petroleum Products (Reid Method), IBR approved for §§60.111(l), 60.111a(g), 60.111b, and 60.116b(f).

(31) ASTM D323-94, Test Method for Vapor Pressure of Petroleum Products (Reid Method), IBR approved for §§60.111(l), 60.111a(g), 60.111b, and 60.116b(f).

(32) ASTM D388-77, Standard Specification for Classification of Coals by Rank, IBR approved for §§60.41, 60.45(f), 60.41Da, 60.41b, 60.41c, and 60.251.

(33) ASTM D388-90, Standard Specification for Classification of Coals by Rank, IBR approved for §§60.41, 60.45(f), 60.41Da, 60.41b, 60.41c, and 60.251.

(34) ASTM D388-91, Standard Specification for Classification of Coals by Rank, IBR approved for §§60.41, 60.45(f), 60.41Da, 60.41b, 60.41c, and 60.251.

(35) ASTM D388-95, Standard Specification for Classification of Coals by Rank, IBR approved for §§60.41, 60.45(f), 60.41Da, 60.41b, 60.41c, and 60.251.

(36) ASTM D388-98a, Standard Specification for Classification of Coals by Rank, IBR approved for §§60.41, 60.45(f), 60.41Da, 60.41b, 60.41c, and 60.251.

(37) ASTM D388-99 (Reapproved 2004)$^{\epsilon 1}$Standard Classification of Coals by Rank, IBR approved for §§60.41, 60.45(f), 60.41Da, 60.41b, 60.41c, 60.251, and 60.5580.

(38) ASTM D396-78, Standard Specification for Fuel Oils, IBR approved for §§60.41b, 60.41c, 60.111(b), and 60.111a(b).

(39) ASTM D396-89, Standard Specification for Fuel Oils, IBR approved for §§60.41b, 60.41c, 60.111(b), and 60.111a(b).

(40) ASTM D396-90, Standard Specification for Fuel Oils, IBR approved for §§60.41b, 60.41c, 60.111(b), and 60.111a(b).

(41) ASTM D396-92, Standard Specification for Fuel Oils, IBR approved for §§60.41b, 60.41c, 60.111(b), and 60.111a(b).

(42) ASTM D396-98, Standard Specification for Fuel Oils, IBR approved for §§60.41b, 60.41c, 60.111(b), 60.111a(b), and 60.5580.

(43) ASTM D975-78, Standard Specification for Diesel Fuel Oils, IBR approved for §§60.111(b) and 60.111a(b).

(44) ASTM D975-96, Standard Specification for Diesel Fuel Oils, IBR approved for §§60.111(b) and 60.111a(b).

(45) ASTM D975-98a, Standard Specification for Diesel Fuel Oils, IBR approved for §§60.111(b) and 60.111a(b).

(46) ASTM D975-08a, Standard Specification for Diesel Fuel Oils, IBR approved for §§60.41b 60.41c, and 60.5580.

(47) ASTM D1072-80, Standard Test Method for Total Sulfur in Fuel Gases, IBR approved for §60.335(b).

(48) ASTM D1072-90 (Reapproved 1994), Standard Test Method for Total Sulfur in Fuel Gases, IBR approved for §60.335(b).

(49) ASTM D1072-90 (Reapproved 1999), Standard Test Method for Total Sulfur in Fuel Gases, IBR approved for §60.4415(a).

(50) ASTM D1137-53, Standard Method for Analysis of Natural Gases and Related Types of Gaseous Mixtures by the Mass Spectrometer, IBR approved for §60.45(f).

(51) ASTM D1137-75, Standard Method for Analysis of Natural Gases and Related Types of Gaseous Mixtures by the Mass Spectrometer, IBR approved for §60.45(f).

(52) ASTM D1193-77, Standard Specification for Reagent Water, IBR approved for appendix A-3 to part 60: Method 5, Section 7.1.3; Method 5E, Section 7.2.1; Method 5F, Section 7.2.1; appendix A-4 to part 60: Method 6, Section 7.1.1; Method 7, Section 7.1.1; Method 7C, Section 7.1.1; Method 7D, Section 7.1.1; Method 10A, Section 7.1.1; appendix A-5 to part 60: Method 11, Section 7.1.3; Method 12, Section 7.1.3; Method 13A, Section 7.1.2; appendix A-8 to part 60: Method 26, Section 7.1.2; Method 26A, Section 7.1.2; and Method 29, Section 7.2.2.

(53) ASTM D1193-91, Standard Specification for Reagent Water, IBR approved for appendix A-3 to part 60: Method 5, Section 7.1.3; Method 5E, Section 7.2.1; Method 5F, Section 7.2.1; appendix A-4 to part 60: Method 6, Section 7.1.1; Method 7, Section 7.1.1; Method 7C, Section 7.1.1; Method 7D, Section 7.1.1; Method 10A, Section 7.1.1; appendix A-5 to part 60: Method 11, Section 7.1.3; Method 12, Section 7.1.3; Method 13A, Section 7.1.2; appendix A-8 to part 60: Method 26, Section 7.1.2; Method 26A, Section 7.1.2; and Method 29, Section 7.2.2.

(54) ASTM D1266-87, Standard Test Method for Sulfur in Petroleum Products (Lamp Method), IBR approved for §§60.106(j) and 60.335(b).

(55) ASTM D1266-91, Standard Test Method for Sulfur in Petroleum Products (Lamp Method), IBR approved for §§60.106(j) and 60.335(b).

(56) ASTM D1266-98, Standard Test Method for Sulfur in Petroleum Products (Lamp Method), IBR approved for §§60.106(j) and 60.335(b).

(57) ASTM D1266-98 (Reapproved 2003)$^{\varepsilon 1}$ Standard Test Method for Sulfur in Petroleum Products (Lamp Method), IBR approved for §60.4415(a).

(58) ASTM D1475-60 (Reapproved 1980), Standard Test Method for Density of Paint, Varnish Lacquer, and Related Products, IBR approved for §60.435(d), appendix A-8 to part 60: Method 24, Section 6.1; and Method 24A, Sections 6.5 and 7.1.

(59) ASTM D1475-90, Standard Test Method for Density of Paint, Varnish Lacquer, and Related Products, IBR approved for §60.435(d), appendix A-8 to part 60: Method 24, Section 6.1; and Method 24A, §§6.5 and 7.1.

(60) ASTM D1552-83, Standard Test Method for Sulfur in Petroleum Products (High-Temperature Method), IBR approved for §§60.106(j), 60.335(b), and appendix A-7 to part 60: Method 19, Section 12.5.2.2.3.

(61) ASTM D1552-95, Standard Test Method for Sulfur in Petroleum Products (High-Temperature Method), IBR approved for §§60.106(j), 60.335(b), and appendix A-7 to part 60: Method 19, Section 12.5.2.2.3.

(62) ASTM D1552-01, Standard Test Method for Sulfur in Petroleum Products (High-Temperature Method), IBR approved for §§60.106(j), 60.335(b), and appendix A-7 to part 60: Method 19, Section 12.5.2.2.3.

(63) ASTM D1552-03, Standard Test Method for Sulfur in Petroleum Products (High-Temperature Method), IBR approved for §60.4415(a).

(64) ASTM D1826-77, Standard Test Method for Calorific Value of Gases in Natural Gas Range by Continuous Recording Calorimeter, IBR approved for §§60.45(f), 60.46(c), 60.296(b), and appendix A-7 to part 60: Method 19, Section 12.3.2.4.

(65) ASTM D1826-94, Standard Test Method for Calorific Value of Gases in Natural Gas Range by Continuous Recording Calorimeter, IBR approved for §§60.45(f), 60.46(c), 60.296(b), and appendix A-7 to part 60: Method 19, Section 12.3.2.4.

(66) ASTM D1826-94 (Reapproved 2003), Standard Test Method for Calorific (Heating) Value of Gases in Natural Gas Range by Continuous Recording Calorimeter, (Approved May 10, 2003), IBR approved for §60.107a(d).

(67) ASTM D1835-87, Standard Specification for Liquefied Petroleum (LP) Gases, IBR approved for §§60.41Da, 60.41b, and 60.41c.

(68) ASTM D1835-91, Standard Specification for Liquefied Petroleum (LP) Gases, IBR approved for §§60.41Da, 60.41b, and 60.41c.

(69) ASTM D1835-97, Standard Specification for Liquefied Petroleum (LP) Gases, IBR approved for §§60.41Da, 60.41b, and 60.41c.

(70) ASTM D1835-03a, Standard Specification for Liquefied Petroleum (LP) Gases, IBR approved for §§60.41Da, 60.41b, and 60.41c.

(71) ASTM D1945-64, Standard Method for Analysis of Natural Gas by Gas Chromatography, IBR approved for §60.45(f).

(72) ASTM D1945-76, Standard Method for Analysis of Natural Gas by Gas Chromatography, IBR approved for §60.45(f).

(73) ASTM D1945-91, Standard Method for Analysis of Natural Gas by Gas Chromatography, IBR approved for §60.45(f).

(74) ASTM D1945-96, Standard Method for Analysis of Natural Gas by Gas Chromatography, IBR approved for §60.45(f).

(75) ASTM D1945-03 (Reapproved 2010), Standard Method for Analysis of Natural Gas by Gas Chromatography, (Approved January 1, 2010), IBR approved for §§60.107a(d), 60.5413(d), 60.5413a(d).

(76) ASTM D1946-77, Standard Method for Analysis of Reformed Gas by Gas Chromatography, IBR approved for §§60.18(f), 60.45(f), 60.564(f), 60.614(e), 60.664(e), and 60.704(d).

(77) ASTM D1946-90 (Reapproved 1994), Standard Method for Analysis of Reformed Gas by Gas Chromatography, IBR approved for §§60.18(f), 60.45(f), 60.564(f), 60.614(e), 60.664(e), and 60.704(d).

(78) ASTM D1946-90 (Reapproved 2006), Standard Method for Analysis of Reformed Gas by Gas Chromatography, (Approved June 1, 2006), IBR approved for §60.107a(d).

(79) ASTM D2013-72, Standard Method of Preparing Coal Samples for Analysis, IBR approved for appendix A-7 to part 60: Method 19, Section 12.5.2.1.3.

(80) ASTM D2013-86, Standard Method of Preparing Coal Samples for Analysis, IBR approved for appendix A-7 to part 60: Method 19, Section 12.5.2.1.3.

(81) ASTM D2015-77 (Reapproved 1978), Standard Test Method for Gross Calorific Value of Solid Fuel by the Adiabatic Bomb Calorimeter, IBR approved for §§60.45(f), 60.46(c), and appendix A-7 to part 60: Method 19, Section 12.5.2.1.3.

(82) ASTM D2015-96, Standard Test Method for Gross Calorific Value of Solid Fuel by the Adiabatic Bomb Calorimeter, IBR approved for §§60.45(f), 60.46(c), and appendix A-7 to part 60: Method 19, Section 12.5.2.1.3.

(83) ASTM D2016-74, Standard Test Methods for Moisture Content of Wood, IBR approved for appendix A-8 to part 60: Method 28, Section 16.1.1.

(84) ASTM D2016-83, Standard Test Methods for Moisture Content of Wood, IBR approved for appendix A-8 to part 60: Method 28, Section 16.1.1.

(85) ASTM D2234-76, Standard Methods for Collection of a Gross Sample of Coal, IBR approved for appendix A-7 to part 60: Method 19, Section 12.5.2.1.1.

(86) ASTM D2234-96, Standard Methods for Collection of a Gross Sample of Coal, IBR approved for appendix A-7 to part 60: Method 19, Section 12.5.2.1.1.

(87) ASTM D2234-97b, Standard Methods for Collection of a Gross Sample of Coal, IBR approved for appendix A-7 to part 60: Method 19, Section 12.5.2.1.1.

(88) ASTM D2234-98, Standard Methods for Collection of a Gross Sample of Coal, IBR approved for appendix A-7 to part 60: Method 19, Section 12.5.2.1.1.

(89) ASTM D2369-81, Standard Test Method for Volatile Content of Coatings, IBR approved for appendix A-8 to part 60: Method 24, Section 6.2.

(90) ASTM D2369-87, Standard Test Method for Volatile Content of Coatings, IBR approved for appendix A-8 to part 60: Method 24, Section 6.2.

(91) ASTM D2369-90, Standard Test Method for Volatile Content of Coatings, IBR approved for appendix A-8 to part 60: Method 24, Section 6.2.

(92) ASTM D2369-92, Standard Test Method for Volatile Content of Coatings, IBR approved for appendix A-8 to part 60: Method 24, Section 6.2.

(93) ASTM D2369-93, Standard Test Method for Volatile Content of Coatings, IBR approved for appendix A-8 to part 60: Method 24, Section 6.2.

(94) ASTM D2369-95, Standard Test Method for Volatile Content of Coatings, IBR approved for appendix A-8 to part 60: Method 24, Section 6.2.

(95) ASTM D2382-76, Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision Method), IBR approved for §§60.18(f), 60.485(g), 60.485a(g), 60.564(f), 60.614(e), 60.664(e), and 60.704(d).

(96) ASTM D2382-88, Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision Method), IBR approved for §§60.18(f), 60.485(g), 60.485a(g), 60.564(f), 60.614(e), 60.664(e), and 60.704(d).

(97) ASTM D2504-67, Noncondensable Gases in C3 and Lighter Hydrocarbon Products by Gas Chromatography, IBR approved for §§60.485(g) and 60.485a(g).

(98) ASTM D2504-77, Noncondensable Gases in C3 and Lighter Hydrocarbon Products by Gas Chromatography, IBR approved for §§60.485(g) and 60.485a(g).

(99) ASTM D2504-88 (Reapproved 1993), Noncondensable Gases in C3 and Lighter Hydrocarbon Products by Gas Chromatography, IBR approved for §§60.485(g) and 60.485a(g).

(100) ASTM D2584-68(Reapproved 1985), Standard Test Method for Ignition Loss of Cured Reinforced Resins, IBR approved for §60.685(c).

(101) ASTM D2584-94, Standard Test Method for Ignition Loss of Cured Reinforced Resins, IBR approved for §60.685(c).

(102) ASTM D2597-94 (Reapproved 1999), Standard Test Method for Analysis of Demethanized Hydrocarbon Liquid Mixtures Containing Nitrogen and Carbon Dioxide by Gas Chromatography, IBR approved for §60.335(b).

(103) ASTM D2622-87, Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-Ray Fluorescence Spectrometry, IBR approved for §§60.106(j) and 60.335(b).

(104) ASTM D2622-94, Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-Ray Fluorescence Spectrometry, IBR approved for §§60.106(j) and 60.335(b).

(105) ASTM D2622-98, Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-Ray Fluorescence Spectrometry, IBR approved for §§60.106(j) and 60.335(b).

(106) ASTM D2622-05, Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-Ray Fluorescence Spectrometry, IBR approved for §60.4415(a).

(107) ASTM D2879-83Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope, IBR approved for §§60.111b(f)(3), 60.116b(e), 60.116b(f), 60.485(e), and 60.485a(e).

(108) ASTM D2879-96, Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope, IBR approved for §§60.111b(f)(3), 60.116b(e), 60.116b(f), 60.485(e), and 60.485a(e).

(109) ASTM D2879-97, Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope, IBR approved for §§60.111b(f)(3), 60.116b(e), 60.116b(f), 60.485(e), and 60.485a(e).

(110) ASTM D2880-78, Standard Specification for Gas Turbine Fuel Oils, IBR approved for §§60.111(b), 60.111a(b), and 60.335(d).

(111) ASTM D2880-96, Standard Specification for Gas Turbine Fuel Oils, IBR approved for §§60.111(b), 60.111a(b), and 60.335(d).

(112) ASTM D2908-74, Standard Practice for Measuring Volatile Organic Matter in Water by Aqueous-Injection Gas Chromatography, IBR approved for §60.564(j).

(113) ASTM D2908-91, Standard Practice for Measuring Volatile Organic Matter in Water by Aqueous-Injection Gas Chromatography, IBR approved for §60.564(j).

(114) ASTM D2986-71, Standard Method for Evaluation of Air, Assay Media by the Monodisperse DOP (Dioctyl Phthalate) Smoke Test, IBR approved for appendix A-3 to part 60: Method 5, Section 7.1.1; appendix A-5 to part 60: Method 12, Section 7.1.1; and Method 13A, Section 7.1.1.2.

(115) ASTM D2986-78, Standard Method for Evaluation of Air, Assay Media by the Monodisperse DOP (Dioctyl Phthalate) Smoke Test, IBR approved for appendix A-3 to part 60: Method 5, Section 7.1.1; appendix A-5 to part 60: Method 12, Section 7.1.1; and Method 13A, Section 7.1.1.2.

(116) ASTM D2986-95a, Standard Method for Evaluation of Air, Assay Media by the Monodisperse DOP (Dioctyl Phthalate) Smoke Test, IBR approved for appendix A-3 to part 60: Method 5, Section 7.1.1; appendix A-5 to part 60: Method 12, Section 7.1.1; and Method 13A, Section 7.1.1.2.

(117) ASTM D3173-73, Standard Test Method for Moisture in the Analysis Sample of Coal and Coke, IBR approved for appendix A-7 to part 60: Method 19, Section 12.5.2.1.3.

(118) ASTM D3173-87, Standard Test Method for Moisture in the Analysis Sample of Coal and Coke, IBR approved for appendix A-7 to part 60: Method 19, Section 12.5.2.1.3.

(119) ASTM D3176-74, Standard Method for Ultimate Analysis of Coal and Coke, IBR approved for §60.45(f)(5)(i) and appendix A-7 to part 60: Method 19, Section 12.3.2.3.

(120) ASTM D3176-89, Standard Method for Ultimate Analysis of Coal and Coke, IBR approved for §60.45(f)(5)(i) and appendix A-7 to part 60: Method 19, Section 12.3.2.3.

(121) ASTM D3177-75, Standard Test Method for Total Sulfur in the Analysis Sample of Coal and Coke, IBR approved for appendix A-7 to part 60: Method 19, Section 12.5.2.1.3.

(122) ASTM D3177-89, Standard Test Method for Total Sulfur in the Analysis Sample of Coal and Coke, IBR approved for appendix A-7 to part 60: Method 19, Section 12.5.2.1.3.

(123) ASTM D3178-73 (Reapproved 1979), Standard Test Methods for Carbon and Hydrogen in the Analysis Sample of Coal and Coke, IBR approved for §60.45(f).

(124) ASTM D3178-89, Standard Test Methods for Carbon and Hydrogen in the Analysis Sample of Coal and Coke, IBR approved for §60.45(f).

(125) ASTM D3246-81, Standard Test Method for Sulfur in Petroleum Gas by Oxidative Microcoulometry, IBR approved for §60.335(b).

(126) ASTM D3246-92, Standard Test Method for Sulfur in Petroleum Gas by Oxidative Microcoulometry, IBR approved for §60.335(b).

(127) ASTM D3246-96, Standard Test Method for Sulfur in Petroleum Gas by Oxidative Microcoulometry, IBR approved for §60.335(b).

(128) ASTM D3246-05, Standard Test Method for Sulfur in Petroleum Gas by Oxidative Microcoulometry, IBR approved for §60.4415(a)(1).

(129) ASTM D3270-73T, Standard Test Methods for Analysis for Fluoride Content of the Atmosphere and Plant Tissues (Semiautomated Method), IBR approved for appendix A-5 to part 60: Method 13A, Section 16.1.

(130) ASTM D3270-80, Standard Test Methods for Analysis for Fluoride Content of the Atmosphere and Plant Tissues (Semiautomated Method), IBR approved for appendix A-5 to part 60: Method 13A, Section 16.1.

(131) ASTM D3270-91, Standard Test Methods for Analysis for Fluoride Content of the Atmosphere and Plant Tissues (Semiautomated Method), IBR approved for appendix A-5 to part 60: Method 13A, Section 16.1.

(132) ASTM D3270-95, Standard Test Methods for Analysis for Fluoride Content of the Atmosphere and Plant Tissues (Semiautomated Method), IBR approved for appendix A-5 to part 60: Method 13A, Section 16.1.

(133) ASTM D3286-85, Standard Test Method for Gross Calorific Value of Coal and Coke by the Isoperibol Bomb Calorimeter, IBR approved for appendix A-7 to part 60: Method 19, Section 12.5.2.1.3.

(134) ASTM D3286-96, Standard Test Method for Gross Calorific Value of Coal and Coke by the Isoperibol Bomb Calorimeter, IBR approved for appendix A-7 to part 60: Method 19, Section 12.5.2.1.3.

(135) ASTM D3370-76, Standard Practices for Sampling Water, IBR approved for §60.564(j).

(136) ASTM D3370-95a, Standard Practices for Sampling Water, IBR approved for §60.564(j).

(137) ASTM D3588-98 (Reapproved 2003), Standard Practice for Calculating Heat Value, Compressibility Factor, and Relative Density of Gaseous Fuels, (Approved May 10, 2003), IBR approved for §§60.107a(d), 60.5413(d), and 60.5413a(d).

(138) ASTM D3699-08, Standard Specification for Kerosine, including Appendix X1, (Approved September 1, 2008), IBR approved for §§60.41b, 60.41c, and 60.5580.

(139) ASTM D3792-79, Standard Test Method for Water Content of Water-Reducible Paints by Direct Injection into a Gas Chromatograph, IBR approved for appendix A-7 to part 60: Method 24, Section 6.3.

(140) ASTM D3792-91, Standard Test Method for Water Content of Water-Reducible Paints by Direct Injection into a Gas Chromatograph, IBR approved for appendix A-7 to part 60: Method 24, Section 6.3.

(141) ASTM D4017-81, Standard Test Method for Water in Paints and Paint Materials by the Karl Fischer Titration Method, IBR approved for appendix A-7 to part 60: Method 24, Section 6.4.

(142) ASTM D4017-90, Standard Test Method for Water in Paints and Paint Materials by the Karl Fischer Titration Method, IBR approved for appendix A-7 to part 60: Method 24, Section 6.4.

(143) ASTM D4017-96a, Standard Test Method for Water in Paints and Paint Materials by the Karl Fischer Titration Method, IBR approved for appendix A-7 to part 60: Method 24, Section 6.4.

(144) ASTM D4057-81, Standard Practice for Manual Sampling of Petroleum and Petroleum Products, IBR approved for appendix A-7 to part 60: Method 19, Section 12.5.2.2.3.

(145) ASTM D4057-95, Standard Practice for Manual Sampling of Petroleum and Petroleum Products, IBR approved for appendix A-7 to part 60: Method 19, Section 12.5.2.2.3.

(146) ASTM D4057-95 (Reapproved 2000), Standard Practice for Manual Sampling of Petroleum and Petroleum Products, IBR approved for §60.4415(a).

(147) ASTM D4084-82, Standard Test Method for Analysis of Hydrogen Sulfide in Gaseous Fuels (Lead Acetate Reaction Rate Method), IBR approved for §60.334(h).

(148) ASTM D4084-94, Standard Test Method for Analysis of Hydrogen Sulfide in Gaseous Fuels (Lead Acetate Reaction Rate Method), IBR approved for §60.334(h).

(149) ASTM D4084-05, Standard Test Method for Analysis of Hydrogen Sulfide in Gaseous Fuels (Lead Acetate Reaction Rate Method), IBR approved for §§60.4360 and 60.4415(a).

(150) ASTM D4177-95, Standard Practice for Automatic Sampling of Petroleum and Petroleum Products, IBR approved for appendix A-7 to part 60: Method 19, Section 12.5.2.2.1.

(151) ASTM D4177-95 (Reapproved 2000), Standard Practice for Automatic Sampling of Petroleum and Petroleum Products, IBR approved for §60.4415(a).

(152) ASTM D4239-85, Standard Test Methods for Sulfur in the Analysis Sample of Coal and Coke Using High Temperature Tube Furnace Combustion Methods, IBR approved for appendix A-7 to part 60: Method 19, Section 12.5.2.1.3.

(153) ASTM D4239-94, Standard Test Methods for Sulfur in the Analysis Sample of Coal and Coke Using High Temperature Tube Furnace Combustion Methods, IBR approved for appendix A-7 to part 60: Method 19, Section 12.5.2.1.3.

(154) ASTM D4239-97, Standard Test Methods for Sulfur in the Analysis Sample of Coal and Coke Using High Temperature Tube Furnace Combustion Methods, IBR approved for appendix A-7 to part 60: Method 19, Section 12.5.2.1.3.

(155) ASTM D4294-02, Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry, IBR approved for §60.335(b).

(156) ASTM D4294-03, Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry, IBR approved for §60.4415(a).

(157) ASTM D4442-84, Standard Test Methods for Direct Moisture Content Measurement in Wood and Wood-base Materials, IBR approved for appendix A-8 to part 60: Method 28, Section 16.1.1.

(158) ASTM D4442-92, Standard Test Methods for Direct Moisture Content Measurement in Wood and Wood-base Materials, IBR approved for appendix A-8 to part 60: Method 28, Section 16.1.1.

(159) ASTM D4444-92, Standard Test Methods for Use and Calibration of Hand-Held Moisture Meters, IBR approved for appendix A-8 to part 60: Method 28, Section 16.1.1.

(160) ASTM D4457-85 (Reapproved 1991), Test Method for Determination of Dichloromethane and 1,1,1-Trichloroethane in Paints and Coatings by Direct Injection into a Gas Chromatograph, IBR approved for appendix A-7 to part 60: Method 24, Section 6.5.

(161) ASTM D4468-85 (Reapproved 2000), Standard Test Method for Total Sulfur in Gaseous Fuels by Hydrogenolysis and Rateometric Colorimetry, IBR approved for §§60.335(b) and 60.4415(a).

(162) ASTM D4468-85 (Reapproved 2006), Standard Test Method for Total Sulfur in Gaseous Fuels by Hydrogenolysis and Rateometric Colorimetry, (Approved June 1, 2006), IBR approved for §60.107a(e).

(163) ASTM D4629-02, Standard Test Method for Trace Nitrogen in Liquid Petroleum Hydrocarbons by Syringe/Inlet Oxidative Combustion and Chemiluminescence Detection, IBR approved for §§60.49b(e) and 60.335(b).

(164) ASTM D4809-95, Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter (Precision Method), IBR approved for §§60.18(f), 60.485(g), 60.485a(g), 60.564(f), 60.614(d), 60.664(e), and 60.704(d).

(165) ASTM D4809-06, Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter (Precision Method), (Approved December 1, 2006), IBR approved for §60.107a(d).

(166) ASTM D4810-88 (Reapproved 1999), Standard Test Method for Hydrogen Sulfide in Natural Gas Using Length of Stain Detector Tubes, IBR approved for §§60.4360 and 60.4415(a).

(167) ASTM D4891-89 (Reapproved 2006) Standard Test Method for Heating Value of Gases in Natural Gas Range by Stoichiometric Combustion, (Approved June 1, 2006), IBR approved for §§60.107a(d), 60.5413(d), and 60.5413a(d).

(168) ASTM D5287-97 (Reapproved 2002), Standard Practice for Automatic Sampling of Gaseous Fuels, IBR approved for §60.4415(a).

(169) ASTM D5403-93, Standard Test Methods for Volatile Content of Radiation Curable Materials, IBR approved for appendix A-7 to part 60: Method 24, Section 6.6.

(170) ASTM D5453-00, Standard Test Method for Determination of Total Sulfur in Light Hydrocarbons, Motor Fuels and Oils by Ultraviolet Fluorescence, IBR approved for §60.335(b).

(171) ASTM D5453-05, Standard Test Method for Determination of Total Sulfur in Light Hydrocarbons, Motor Fuels and Oils by Ultraviolet Fluorescence, IBR approved for §60.4415(a).

(172) ASTM D5504-01, Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence, IBR approved for §§60.334(h) and 60.4360.

(173) ASTM D5504-08, Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence, (Approved June 15, 2008), IBR approved for §§60.107a(e) and 60.5413(d).

(174) ASTM D5762-02, Standard Test Method for Nitrogen in Petroleum and Petroleum Products by Boat-Inlet Chemiluminescence, IBR approved for §60.335(b).

(175) ASTM D5865-98, Standard Test Method for Gross Calorific Value of Coal and Coke, IBR approved for §§60.45(f) and 60.46(c), and appendix A-7 to part 60: Method 19, Section 12.5.2.1.3.

(176) ASTM D5865-10, Standard Test Method for Gross Calorific Value of Coal and Coke, (Approved January 1, 2010), IBR approved for §§60.45(f), 60.46(c), and appendix A-7 to part 60: Method 19, section 12.5.2.1.3.

(177) ASTM D6216-98, Standard Practice for Opacity Monitor Manufacturers to Certify Conformance with Design and Performance Specifications, IBR approved for appendix B to part 60: Performance Specification 1.

(178) ASTM D6228-98, Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Flame Photometric Detection, IBR approved for §60.334(h).

(179) ASTM D6228-98 (Reapproved 2003), Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Flame Photometric Detection, IBR approved for §§60.4360 and 60.4415.

(180) ASTM D6348-03, Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy, (Approved October 1, 2003), IBR approved for §60.73a(b), table 7 to subpart IIII, table 2 to subpart JJJJ, and §60.4245(d).

(181) ASTM D6366-99, Standard Test Method for Total Trace Nitrogen and Its Derivatives in Liquid Aromatic Hydrocarbons by Oxidative Combustion and Electrochemical Detection, IBR approved for §60.335(b)(9).

(182) ASTM D6420-99 (Reapproved 2004), Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry, (Approved October 1, 2004), IBR approved for §60.107a(d) and table 2 to subpart JJJJ.

(183) ASTM D6522-00, Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers, IBR approved for §60.335(a).

(184) ASTM D6522-00 (Reapproved 2005), Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers, (Approved October 1, 2005), IBR approved for table 2 to subpart JJJJ, §§60.5413(b) and (d), and 60.5413a(b).

(185) ASTM D6522-11 Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers (Approved December 1, 2011), IBR approved for §60.37f(a), 60.766(a).

(186) ASTM D6667-01, Standard Test Method for Determination of Total Volatile Sulfur in Gaseous Hydrocarbons and Liquefied Petroleum Gases by Ultraviolet Fluorescence, IBR approved for §60.335(b).

(187) ASTM D6667-04, Standard Test Method for Determination of Total Volatile Sulfur in Gaseous Hydrocarbons and Liquefied Petroleum Gases by Ultraviolet Fluorescence, IBR approved for §60.4415(a).

(188) ASTM D6751-11b, Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels, including Appendices X1 through X3, (Approved July 15, 2011), IBR approved for §§60.41b, 60.41c, and 60.5580.

(189) ASTM D6784-02, Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method), IBR approved for §60.56c(b) and appendix B to part 60: Performance Specification 12A, Section 8.6.2.

(190) ASTM D6784-02 (Reapproved 2008) Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method), (Approved April 1, 2008), IBR approved for §§60.2165(j) and 60.2730(j), tables 1, 5, 6 and 8 to subpart CCCC, and tables 2, 6, 7, and 9 to subpart DDDD, §§60.4900(b), 60.5220(b), tables 1 and 2 to subpart LLLL, and tables 2 and 3 to subpart MMMM.

(191) ASTM D6911-15, Standard Guide for Packaging and Shipping Environmental Samples for Laboratory Analysis, approved January 15, 2015, IBR approved for appendix A-8: Method 30B.

(192) ASTM D7467-10, Standard Specification for Diesel Fuel Oil, Biodiesel Blend (B6 to B20), including Appendices X1 through X3, (Approved August 1, 2010), IBR approved for §§60.41b, 60.41c, and 60.5580.

(193) ASTM E168-67, General Techniques of Infrared Quantitative Analysis, IBR approved for §§60.485a(d), 60.593(b), 60.593a(b), and 60.632(f).

(194) ASTM E168-77, General Techniques of Infrared Quantitative Analysis, IBR approved for §§60.485a(d), 60.593(b), 60.593a(b), and 60.632(f).

(195) ASTM E168-92, General Techniques of Infrared Quantitative Analysis, IBR approved for §§60.485a(d), 60.593(b), 60.593a(b), 60.632(f), 60.5400, 60.5400a(f).

(196) ASTM E169-63, General Techniques of Ultraviolet Quantitative Analysis, IBR approved for §§60.485a(d), 60.593(b), 60.593a(b), and 60.632(f) .

(197) ASTM E169-77, General Techniques of Ultraviolet Quantitative Analysis, IBR approved for §§60.485a(d), 60.593(b), and 60.593a(b), 60.632(f).

(198) ASTM E169-93, General Techniques of Ultraviolet Quantitative Analysis, (Approved May 15, 1993), IBR approved for §§60.485a(d), 60.593(b), 60.593a(b), 60.632(f), 60.5400(f), and 60.5400a(f).

(199) ASTM E260-73, General Gas Chromatography Procedures, IBR approved for §§60.485a(d), 60.593(b), 60.593a(b), and 60.632(f).

(200) ASTM E260-91, General Gas Chromatography Procedures, (IBR approved for §§60.485a(d), 60.593(b), 60.593a(b), and 60.632(f).

(201) ASTM E260-96, General Gas Chromatography Procedures, (Approved April 10, 1996), IBR approved for §§60.485a(d), 60.593(b), 60.593a(b), 60.632(f), 60.5400(f), 60.5400a(f) 60.5406(b), and 60.5406a(b)(3).

(202) ASTM E617-13, Standard Specification for Laboratory Weights and Precision Mass Standards, approved May 1, 2013, IBR approved for appendix A-3: Methods 4, 5, 5H, 5I, and appendix A-8: Method 29.

(203) ASTM E871-82 (Reapproved 2013), Standard Test Method for Moisture Analysis of Particulate Wood Fuels, (Approved August 15, 2013), IBR approved for appendix A-8: method 28R.

(204) ASTM E1584-11, Standard Test Method for Assay of Nitric Acid, (Approved August 1, 2011), IBR approved for §60.73a(c).

(205) ASTM E2515-11, Standard Test Method for Determination of Particulate Matter Emissions Collected by a Dilution Tunnel, (Approved November 1, 2011), IBR approved for §60.534 and §60.5476.

(206) ASTM E2618-13 Standard Test Method for Measurement of Particulate Matter Emissions and Heating Efficiency of Outdoor Solid Fuel-Fired Hydronic Heating Appliances, (Approved September 1, 2013), IBR approved for §60.5476.

(207) ASTM E2779-10, Standard Test Method for Determining Particulate Matter Emissions from Pellet Heaters, (Approved October 1, 2010), IBR approved for §60.534.

(208) ASTM E2780-10, Standard Test Method for Determining Particulate Matter Emissions from Wood Heaters, (Approved October 1, 2010), IBR approved for appendix A: method 28R.

(209) ASTM UOP539-97, Refinery Gas Analysis by Gas Chromatography, (Copyright 1997), IBR approved for §60.107a(d).

(i) Association of Official Analytical Chemists, 1111 North 19th Street, Suite 210, Arlington, VA 22209.

(1) AOAC Method 9, Official Methods of Analysis of the Association of Official Analytical Chemists (AOAC), 11th edition, 1970, pp. 11-12, IBR approved for §§60.204(b), 60.214(b), 60.224(b), and 60.234(b).

(2) [Reserved]

(j) U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue NW., Washington, DC 20460, (202) 272-0167, *http://www.epa.gov.*

(1) EPA-454/R-98-015, Office of Air Quality Planning and Standards (OAQPS) Fabric Filter Bag Leak Detection Guidance, September 1997, IBR approved for §§60.2145(r), 60.2710(r), 60.4905(b), and 60.5225(b).

(2) EPA-600/R-12/531, EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards, May 2012, IBR approved for §§60.5413(d) and 60.5413a(d).

(k) The Gas Processors Association, 6526 East 60th Street, Tulsa, OK 74145; also available through Information Handling Services, 15 Inverness Way East, PO Box 1154, Englewood, CO 80150-1154. You may inspect a copy at the EPA's Air and Radiation Docket and Information Center, Room 3334, 1301 Constitution Ave. NW., Washington, DC 20460.

(1) Gas Processors Association Standard 2172-09, Calculation of Gross Heating Value, Relative Density, Compressibility and Theoretical Hydrocarbon Liquid Content for Natural Gas Mixtures for Custody Transfer (2009), IBR approved for §60.107a(d).

(2) Gas Processors Association Standard 2261-00, Analysis for Natural Gas and Similar Gaseous Mixtures by Gas Chromatography (2000), IBR approved for §60.107a(d).

(3) Gas Processors Association Standard 2377-86, Test for Hydrogen Sulfide and Carbon Dioxide in Natural Gas Using Length of Stain Tubes, 1986 Revision, IBR approved for §§60.105(b), 60.107a(b), 60.334(h), 60.4360, and 60.4415(a).

(l) International Organization for Standardization (ISO) available through IHS Inc., 15 Inverness Way East, Englewood, CO 80112.

(1) ISO 8178-4: 1996(E), Reciprocating Internal Combustion Engines—Exhaust Emission Measurement—part 4: Test Cycles for Different Engine Applications, IBR approved for §60.4241(b).

(2) [Reserved]

(m) International Organization for Standardization (ISO), 1, ch. de la Voie-Creuse, Case postale 56, CH-1211 Geneva 20, Switzerland, + 41 22 749 01 11, *http://www.iso.org/iso/home.htm.*

(1) ISO 2314:2009(E), Gas turbines-Acceptance tests, Third edition (December 15, 2009), IBR approved for §60.5580.

(2) ISO 8316: Measurement of Liquid Flow in Closed Conduits—Method by Collection of the Liquid in a Volumetric Tank (1987-10-01)—First Edition, IBR approved for §60.107a(d).

(n) This material is available for purchase from the National Technical Information Services (NTIS), 5285 Port Royal Road, Springfield, Virginia 22161. You may inspect a copy at the EPA's Air and Radiation Docket and Information Center (Docket A-91-61, Item IV-J-125), Room M-1500, 1200 Pennsylvania Ave. NW., Washington, DC 20460.

(1) OMB Bulletin No. 93-17: Revised Statistical Definitions for Metropolitan Areas. Office of Management and Budget, June 30, 1993. NTIS No. PB 93-192-664. IBR approved for §60.31e.

(2) [Reserved]

(o) North American Electric Reliability Corporation, 1325 G Street NW., Suite 600, Washington, DC 20005-3801, *http://www.nerc.com.*

(1) North American Electric Reliability Corporation Reliability Standard EOP-002-3, Capacity and Energy Emergencies, updated November 19, 2012, IBR approved for §§60.4211(f) and 60.4243(d). Also available online: *http://www.nerc.com/files/EOP-002-3_1.pdf*.

(2) [Reserved]

(p) The following material is available for purchase from the Technical Association of the Pulp and Paper Industry (TAPPI), 15 Technology Parkway South, Suite 115, Peachtree Corners, GA 30092, Telephone (800) 332-8686, and is also available at the following Web site: *http://www.tappi.org.*

(1) TAPPI Method T 624 cm-11, (Copyright 2011), IBR approved, for §§60.285(d) and 60.285a(d).

(2) [Reserved]

(q) Underwriter's Laboratories, Inc. (UL), 333 Pfingsten Road, Northbrook, IL 60062.

(1) UL 103, Sixth Edition revised as of September 3, 1986, Standard for Chimneys, Factory-built, Residential Type and Building Heating Appliance, IBR approved for appendix A-8 to part 60.

(2) [Reserved]

(r) Water Pollution Control Federation (WPCF), 2626 Pennsylvania Avenue NW., Washington, DC 20037.

(1) Method 209A, Total Residue Dried at 103-105 °C, in Standard Methods for the Examination of Water and Wastewater, 15th Edition, 1980, IBR approved for §60.683(b).

(2) [Reserved]

(s) West Coast Lumber Inspection Bureau, 6980 SW. Barnes Road, Portland, OR 97223.

(1) West Coast Lumber Standard Grading Rules No. 16, pages 5-21, 90 and 91, September 3, 1970, revised 1984, IBR approved for appendix A-8 to part 60.

(2) [Reserved]

(t) This material is available for purchase from the Canadian Standards Association (CSA), 5060 Spectrum Way, Suite 100, Mississauga, Ontario, Canada L4W 5N6, Telephone: 800-463-6727.

(1) CSA B415.1-10, Performance Testing of Solid-fuel-burning Heating Appliances, (March 2010), IBR approved for §60.534 and §60.5476. (The standard is also available at *http://shop.csa.ca/en/canada/fuel-burning-equipment/b4151-10/invt/27013322010*)

(2) [Reserved]

(u) This European National (EN) standards material is available for purchase at European Committee for Standardization, Management Centre, Avenue Marnix 17, B-1000 Brussels, Belgium, Telephone: + 32 2 550 0811.

(1) DIN EN 303-5:2012E (EN 303-5), Heating boilers—Part 5: Heating boilers for solid fuels, manually and automatically stoked, nominal heat output of up to 500 kW—Terminology, requirements, testing and marking, (October 2012), IBR approved for §60.5476. (The standard is also available at *http://www.en-standard.eu/csn-en-303-5-heating-boilers-part-5-heating-boilers-for-solid-fuels-manually-and-automatically-stoked-nominal-heat-output-of-up-to-500-kw-terminology-requirements-testing-and-marking/?gclid = CJXI2P_97MMCFdccgQodan8ATA*)

(2) [Reserved]

§60.18 General control device and work practice requirements.

(a) Introduction.

(1) This section contains requirements for control devices used to comply with applicable subparts of 40 CFR parts 60 and 61. The requirements are placed here for administrative convenience and apply only to facilities covered by subparts referring to this section.

(2) This section also contains requirements for an alternative work practice used to identify leaking equipment. This alternative work practice is placed here for administrative convenience and is available to all subparts in 40 CFR parts 60, 61, 63, and 65 that require monitoring of equipment with a 40 CFR part 60, appendix A-7, Method 21 monitor.

(b) *Flares.* Paragraphs (c) through (f) apply to flares.

(c)(1) Flares shall be designed for and operated with no visible emissions as determined by the methods specified in paragraph (f), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

(2) Flares shall be operated with a flame present at all times, as determined by the methods specified in paragraph (f).

(3) An owner/operator has the choice of adhering to either the heat content specifications in paragraph (c)(3)(ii) of this section and the maximum tip velocity specifications in paragraph (c)(4) of this section, or adhering to the requirements in paragraph (c)(3)(i) of this section.

(i)(A) Flares shall be used that have a diameter of 3 inches or greater, are nonassisted, have a hydrogen content of 8.0 percent (by volume), or greater, and are designed for and operated with an exit velocity less than 37.2 m/sec (122 ft/sec) and less than the velocity, V_{max}, as determined by the following equation:

$$V_{max} = (X_{H2} - K_1) * K_2$$

Where:

V_{max} = Maximum permitted velocity, m/sec.

K_1 = Constant, 6.0 volume-percent hydrogen.

K_2 = Constant, 3.9(m/sec)/volume-percent hydrogen.

X_{H2} = The volume-percent of hydrogen, on a wet basis, as calculated by using the American Society for Testing and Materials (ASTM) Method D1946-77. (Incorporated by reference as specified in §60.17).

(B) The actual exit velocity of a flare shall be determined by the method specified in paragraph (f)(4) of this section.

(ii) Flares shall be used only with the net heating value of the gas being combusted being 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or with the net heating value of the gas being combusted being 7.45 MJ/scm (200 Btu/scf) or greater if the flare is nonassisted. The net heating value of the gas being combusted shall be determined by the methods specified in paragraph (f)(3) of this section.

(4)(i) Steam-assisted and nonassisted flares shall be designed for and operated with an exit velocity, as determined by the methods specified in paragraph (f)(4) of this section, less than 18.3 m/sec (60 ft/sec), except as provided in paragraphs (c)(4) (ii) and (iii) of this section.

(ii) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in paragraph (f)(4), equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec) are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf).

(iii) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in paragraph (f)(4), less than the velocity, V_{max}, as determined by the method specified in paragraph (f)(5), and less than 122 m/sec (400 ft/sec) are allowed.

(5) Air-assisted flares shall be designed and operated with an exit velocity less than the velocity, V_{max}, as determined by the method specified in paragraph (f)(6).

(6) Flares used to comply with this section shall be steam-assisted, air-assisted, or nonassisted.

(d) Owners or operators of flares used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs. Applicable subparts will provide provisions stating how owners or operators of flares shall monitor these control devices.

(e) Flares used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.

(f)(1) Method 22 of appendix A to this part shall be used to determine the compliance of flares with the visible emission provisions of this subpart. The observation period is 2 hours and shall be used according to Method 22.

(2) The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.

(3) The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T = K \sum_{i=1}^{n} C_i H_i$$

where:

H_T = Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C;

$$K = \text{Constant}, 1.740 \times 10^{-7} \left(\frac{1}{ppm}\right) \left(\frac{g\ mole}{scm}\right) \left(\frac{MJ}{kcal}\right)$$

where the standard temperature for $\left(\frac{g\ mole}{scm}\right)$ is 20°C;

C_i = Concentration of sample component i in ppm on a wet basis, as measured for organics by Reference Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946-77 or 90 (Reapproved 1994) (Incorporated by reference as specified in §60.17); and

H_i = Net heat of combustion of sample component i, kcal/g mole at 25 °C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 or 88 or D4809-95 (incorporated by reference as specified in §60.17) if published values are not available or cannot be calculated.

(4) The actual exit velocity of a flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip.

(5) The maximum permitted velocity, V_{max}, for flares complying with paragraph (c)(4)(iii) shall be determined by the following equation.

$$\text{Log}_{10}(V_{max}) = (H_T + 28.8)/31.7$$

V_{max} = Maximum permitted velocity, M/sec

28.8 = Constant

31.7 = Constant

H_T = The net heating value as determined in paragraph (f)(3).

(6) The maximum permitted velocity, V_{max}, for air-assisted flares shall be determined by the following equation.

$$V_{max} = 8.706 + 0.7084\,(H_T)$$

V_{max} = Maximum permitted velocity, m/sec

8.706 = Constant

0.7084 = Constant

H_T = The net heating value as determined in paragraph (f)(3).

(g) *Alternative work practice for monitoring equipment for leaks.* Paragraphs (g), (h), and (i) of this section apply to all equipment for which the applicable subpart requires monitoring with a 40 CFR part 60, appendix A-7, Method 21 monitor, except for closed vent systems, equipment designated as leakless, and equipment identified in the applicable subpart as having no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background. An owner or operator may use an optical gas imaging instrument instead of a 40 CFR part 60, appendix A-7, Method 21 monitor. Requirements in the existing subparts that are specific to the Method 21 instrument do not apply under this section. All other requirements in the applicable subpart that are not addressed in paragraphs (g), (h), and (i) of this section apply to this standard. For example, equipment specification requirements, and non-Method 21 instrument recordkeeping and reporting requirements in the applicable subpart continue to apply. The terms defined in paragraphs (g)(1) through (5) of this section have meanings that are specific to the alternative work practice standard in paragraphs (g), (h), and (i) of this section.

(1) *Applicable subpart* means the subpart in 40 CFR parts 60, 61, 63, or 65 that requires monitoring of equipment with a 40 CFR part 60, appendix A-7, Method 21 monitor.

(2) *Equipment* means pumps, valves, pressure relief valves, compressors, open-ended lines, flanges, connectors, and other equipment covered by the applicable subpart that require monitoring with a 40 CFR part 60, appendix A-7, Method 21 monitor.

(3) *Imaging* means making visible emissions that may otherwise be invisible to the naked eye.

(4) *Optical gas imaging instrument* means an instrument that makes visible emissions that may otherwise be invisible to the naked eye.

(5) *Repair* means that equipment is adjusted, or otherwise altered, in order to eliminate a leak.

(6) *Leak* means:

(i) Any emissions imaged by the optical gas instrument;

(ii) Indications of liquids dripping;

(iii) Indications by a sensor that a seal or barrier fluid system has failed; or

(iv) Screening results using a 40 CFR part 60, appendix A-7, Method 21 monitor that exceed the leak definition in the applicable subpart to which the equipment is subject.

(h) The alternative work practice standard for monitoring equipment for leaks is available to all subparts in 40 CFR parts 60, 61, 63, and 65 that require monitoring of equipment with a 40 CFR part 60, appendix A-7, Method 21 monitor.

(1) An owner or operator of an affected source subject to CFR parts 60, 61, 63, or 65 can choose to comply with the alternative work practice requirements in paragraph (i) of this section instead of using the 40 CFR part 60, appendix A-7, Method 21 monitor to identify leaking equipment. The owner or operator must document the equipment, process units, and facilities for which the alternative work practice will be used to identify leaks.

(2) Any leak detected when following the leak survey procedure in paragraph (i)(3) of this section must be identified for repair as required in the applicable subpart.

(3) If the alternative work practice is used to identify leaks, re-screening after an attempted repair of leaking equipment must be conducted using either the alternative work practice or the 40 CFR part 60, appendix A-7, Method 21 monitor at the leak definition required in the applicable subpart to which the equipment is subject.

(4) The schedule for repair is as required in the applicable subpart.

(5) When this alternative work practice is used for detecting leaking equipment, choose one of the monitoring frequencies listed in Table 1 to subpart A of this part in lieu of the monitoring frequency specified for regulated equipment in the applicable subpart. Reduced monitoring frequencies for good performance are not applicable when using the alternative work practice.

(6) When this alternative work practice is used for detecting leaking equipment the following are not applicable for the equipment being monitored:

(i) Skip period leak detection and repair;

(ii) Quality improvement plans; or

(iii) Complying with standards for allowable percentage of valves and pumps to leak.

(7) When the alternative work practice is used to detect leaking equipment, the regulated equipment in paragraph (h)(1)(i) of this section must also be monitored annually using a 40 CFR part 60, appendix A-7, Method 21 monitor at the leak definition required in the applicable subpart. The owner or operator may choose the specific monitoring period (for example, first quarter) to conduct the annual monitoring. Subsequent monitoring must be conducted every 12 months from the initial period. Owners or operators must keep records of the annual Method 21 screening results, as specified in paragraph (i)(4)(vii) of this section.

(i) An owner or operator of an affected source who chooses to use the alternative work practice must comply with the requirements of paragraphs (i)(1) through (i)(5) of this section.

(1) Instrument Specifications. The optical gas imaging instrument must comply with the requirements in (i)(1)(i) and (i)(1)(ii) of this section.

(i) Provide the operator with an image of the potential leak points for each piece of equipment at both the detection sensitivity level and within the distance used in the daily instrument check described in paragraph (i)(2) of this section. The detection sensitivity level depends upon the frequency at which leak monitoring is to be performed.

(ii) Provide a date and time stamp for video records of every monitoring event.

(2) Daily Instrument Check. On a daily basis, and prior to beginning any leak monitoring work, test the optical gas imaging instrument at the mass flow rate determined in paragraph (i)(2)(i) of this section in accordance with the procedure specified in paragraphs (i)(2)(ii) through (i)(2)(iv) of this section for each camera configuration used during monitoring (for example, different lenses used), unless an alternative method to demonstrate daily instrument checks has been approved in accordance with paragraph (i)(2)(v) of this section.

(i) Calculate the mass flow rate to be used in the daily instrument check by following the procedures in paragraphs (i)(2)(i)(A) and (i)(2)(i)(B) of this section.

(A) For a specified population of equipment to be imaged by the instrument, determine the piece of equipment in contact with the lowest mass fraction of chemicals that are detectable, within the distance to be used in paragraph (i)(2)(iv)(B) of this section, at or below the standard detection sensitivity level.

(B) Multiply the standard detection sensitivity level, corresponding to the selected monitoring frequency in Table 1 of subpart A of this part, by the mass fraction of detectable chemicals from the stream identified in paragraph (i)(2)(i)(A) of this section to determine the mass flow rate to be used in the daily instrument check, using the following equation.

$$E_{dic} = (E_{sds}) \sum_{i=1}^{k} x_i$$

Where:

E_{dic} = Mass flow rate for the daily instrument check, grams per hour

x_i = Mass fraction of detectable chemical(s) i seen by the optical gas imaging instrument, within the distance to be used in paragraph (i)(2)(iv)(B) of this section, at or below the standard detection sensitivity level, E_{sds}.

E_{sds} = Standard detection sensitivity level from Table 1 to subpart A, grams per hour

k = Total number of detectable chemicals emitted from the leaking equipment and seen by the optical gas imaging instrument.

(ii) Start the optical gas imaging instrument according to the manufacturer's instructions, ensuring that all appropriate settings conform to the manufacturer's instructions.

(iii) Use any gas chosen by the user that can be viewed by the optical gas imaging instrument and that has a purity of no less than 98 percent.

(iv) Establish a mass flow rate by using the following procedures:

(A) Provide a source of gas where it will be in the field of view of the optical gas imaging instrument.

(B) Set up the optical gas imaging instrument at a recorded distance from the outlet or leak orifice of the flow meter that will not be exceeded in the actual performance of the leak survey. Do not exceed the operating parameters of the flow meter.

(C) Open the valve on the flow meter to set a flow rate that will create a mass emission rate equal to the mass rate specified in paragraph (i)(2)(i) of this section while observing the gas flow through the optical gas imaging instrument viewfinder. When an image of the gas emission is seen through the viewfinder at the required emission rate, make a record of the reading on the flow meter.

(v) Repeat the procedures specified in paragraphs (i)(2)(ii) through (i)(2)(iv) of this section for each configuration of the optical gas imaging instrument used during the leak survey.

(vi) To use an alternative method to demonstrate daily instrument checks, apply to the Administrator for approval of the alternative under §60.13(i).

(3) Leak Survey Procedure. Operate the optical gas imaging instrument to image every regulated piece of equipment selected for this work practice in accordance with the instrument manufacturer's operating

parameters. All emissions imaged by the optical gas imaging instrument are considered to be leaks and are subject to repair. All emissions visible to the naked eye are also considered to be leaks and are subject to repair.

(4) Recordkeeping. You must keep the records described in paragraphs (i)(4)(i) through (i)(4)(vii) of this section:

(i) The equipment, processes, and facilities for which the owner or operator chooses to use the alternative work practice.

(ii) The detection sensitivity level selected from Table 1 to subpart A of this part for the optical gas imaging instrument.

(iii) The analysis to determine the piece of equipment in contact with the lowest mass fraction of chemicals that are detectable, as specified in paragraph (i)(2)(i)(A) of this section.

(iv) The technical basis for the mass fraction of detectable chemicals used in the equation in paragraph (i)(2)(i)(B) of this section.

(v) The daily instrument check. Record the distance, per paragraph (i)(2)(iv)(B) of this section, and the flow meter reading, per paragraph (i)(2)(iv)(C) of this section, at which the leak was imaged. Keep a video record of the daily instrument check for each configuration of the optical gas imaging instrument used during the leak survey (for example, the daily instrument check must be conducted for each lens used). The video record must include a time and date stamp for each daily instrument check. The video record must be kept for 5 years.

(vi) Recordkeeping requirements in the applicable subpart. A video record must be used to document the leak survey results. The video record must include a time and date stamp for each monitoring event. A video record can be used to meet the recordkeeping requirements of the applicable subparts if each piece of regulated equipment selected for this work practice can be identified in the video record. The video record must be kept for 5 years.

(vii) The results of the annual Method 21 screening required in paragraph (h)(7) of this section. Records must be kept for all regulated equipment specified in paragraph (h)(1) of this section. Records must identify the equipment screened, the screening value measured by Method 21, the time and date of the screening, and calibration information required in the existing applicable subpart.

(5) Reporting. Submit the reports required in the applicable subpart. Submit the records of the annual Method 21 screening required in paragraph (h)(7) of this section to the Administrator via e-mail to *CCG-AWP@EPA.GOV.*

§60.19 General notification and reporting requirements.

(a) For the purposes of this part, time periods specified in days shall be measured in calendar days, even if the word "calendar" is absent, unless otherwise specified in an applicable requirement.

(b) For the purposes of this part, if an explicit postmark deadline is not specified in an applicable requirement for the submittal of a notification, application, report, or other written communication to the Administrator, the owner or operator shall postmark the submittal on or before the number of days specified in the applicable requirement. For example, if a notification must be submitted 15 days before a particular event is scheduled to take place, the notification shall be postmarked on or before 15 days preceding the event; likewise, if a notification must be submitted 15 days after a particular event takes place, the notification shall be delivered or postmarked on or before 15 days following the end of the event. The use of reliable non-Government mail carriers that provide indications of verifiable delivery of information required to be submitted to the Administrator, similar to the postmark provided by the U.S. Postal Service, or alternative means of delivery, including the use of electronic media, agreed to by the permitting authority, is acceptable.

(c) Notwithstanding time periods or postmark deadlines specified in this part for the submittal of information to the Administrator by an owner or operator, or the review of such information by the Administrator, such time periods or deadlines may be changed by mutual agreement between the owner or operator and the Administrator. Procedures governing the implementation of this provision are specified in paragraph (f) of this section.

(d) If an owner or operator of an affected facility in a State with delegated authority is required to submit periodic reports under this part to the State, and if the State has an established timeline for the submission of periodic reports that is consistent with the reporting frequency(ies) specified for such facility under this part, the owner or operator may change the dates by which periodic reports under this part shall be submitted (without changing the frequency of reporting) to be consistent with the State's schedule by mutual agreement between the owner or operator and the State. The allowance in the previous sentence applies in each State beginning 1 year after the affected facility is required to be in compliance with the applicable subpart in this part. Procedures governing the implementation of this provision are specified in paragraph (f) of this section.

(e) If an owner or operator supervises one or more stationary sources affected by standards set under this part and standards set under part 61, part 63, or both such parts of this chapter, he/she may arrange by mutual agreement between the owner or operator and the Administrator (or the State with an approved permit program) a common schedule on which periodic reports required by each applicable standard shall be submitted throughout the year. The allowance in the previous sentence applies in each State beginning 1 year after the stationary source is required to be in compliance with the applicable subpart in this part, or 1 year after the stationary source is required to be in compliance with the applicable 40 CFR part 61 or part 63 of this chapter standard, whichever is latest. Procedures governing the implementation of this provision are specified in paragraph (f) of this section.

(f)(1)(i) Until an adjustment of a time period or postmark deadline has been approved by the Administrator under paragraphs (f)(2) and (f)(3) of this section, the owner or operator of an affected facility remains strictly subject to the requirements of this part.

(ii) An owner or operator shall request the adjustment provided for in paragraphs (f)(2) and (f)(3) of this section each time he or she wishes to change an applicable time period or postmark deadline specified in this part.

(2) Notwithstanding time periods or postmark deadlines specified in this part for the submittal of information to the Administrator by an owner or operator, or the review of such information by the Administrator, such time periods or deadlines may be changed by mutual agreement between the owner or operator and the Administrator. An owner or operator who wishes to request a change in a time period or postmark deadline for a particular requirement shall request the adjustment in writing as soon as practicable before the subject activity is required to take place. The owner or operator shall include in the request whatever information he or she considers useful to convince the Administrator that an adjustment is warranted.

(3) If, in the Administrator's judgment, an owner or operator's request for an adjustment to a particular time period or postmark deadline is warranted, the Administrator will approve the adjustment. The Administrator will notify the owner or operator in writing of approval or disapproval of the request for an adjustment within 15 calendar days of receiving sufficient information to evaluate the request.

(4) If the Administrator is unable to meet a specified deadline, he or she will notify the owner or operator of any significant delay and inform the owner or operator of the amended schedule.

Table 1 to Subpart A of Part 60—Detection Sensitivity Levels (grams per hour)

Monitoring frequency per subpart[a]	Detection sensitivity level
Bi-Monthly	60

Semi-Quarterly	85
Monthly	100

[a]When this alternative work practice is used to identify leaking equipment, the owner or operator must choose one of the monitoring frequencies listed in this table in lieu of the monitoring frequency specified in the applicable subpart. Bi-monthly means every other month. Semi-quarterly means twice per quarter. Monthly means once per month.

Exhibit 4

Technical Support Document
For
Draft Air Emission Permit No. 12300341-101

This technical support document (TSD) is intended for all parties interested in the draft permit and to meet the requirements that have been set forth by the federal and state regulations (40 CFR § 70.7(a)(5) and Minn. R. 7007.0850, subp. 1). The purpose of this document is to provide the legal and factual justification for each applicable requirement or policy decision considered in the preliminary determination to issue the draft permit.

1. General information

1.1 Applicant and stationary source location:

Table 1. Applicant and source address

Applicant/Address	**Stationary source/Address** (SIC Code: 3364 - Nonferrous Die-Castings, Except Aluminum)
Okabe Holdings USA Water Gremlin Company 4400 Otter Lake Rd White Bear Township, Minnesota 55110-3757	Water Gremlin Company 4400 Otter Lake Rd White Bear Township, MN 55110-3757
Contact: Bradley Hartsell Phone: 651-209-9466	

1.2 Facility description

The facility manufactures lead (Pb) metal products fabricated using refined material purchased from recycling facilities. The facility produces battery terminal posts for automotive, marine and other consumer, commercial, governmental, and military vehicles and equipment. Other fabricated products include lead and tin sinker weights for recreational fishing applications, and lead components for governmental, commercial, recreational and personal ammunition. Following fabrication, some battery terminal posts are treated with a coating to protect the products from corrosion or to improve fit with other components. The air emission units at the facility include battery terminal post coating units (coaters), die casting units, lead and tin melt pots, coining units, abrasive blasting units, makeup air units, space heaters, an emergency generator, and a solvent-vapor extraction unit. The major pollutants of concern include volatile organic compounds (VOC), trans-1,2-dichloroethylene (t-DCE), lead, particulate matter (PM), particulate matter with aerodynamic diameter less than 10 micrometers (PM_{10}), particulate matter with aerodynamic diameter less than 2.5 micrometers ($PM_{2.5}$), and nitrogen oxides (NO_x). Other pollutants emitted from facility processes include sulfur dioxide (SO_2), carbon monoxide (CO), and hazardous air pollutants (HAPs) associated with fossil fuel combustion from the compression ignition emergency generator, makeup air units, lead and tin melt pots, space heaters, and soil vapor extraction, which emits small amounts of trichloroethylene (TCE).

Commented [A1]: TCE has been non-detect. Carbon controls are in place. It is not correct to presume TCE via soil vapor when none has been detected.

Pollution control equipment operated at the facility includes eighteen Nederman mist eliminators/HEPA filters and low-efficiency electrostatic precipitators (Smog Hogs), connected in-series, which capture lead and PM/PM_{10}/$PM_{2.5}$emissions from lead processing units. HEPA filters are used to control PM/PM_{10}/$PM_{2.5}$ emissions from select spray coating and abrasive blasting units. The facility also operates a sub-slab depressurization system (SSDS) and soil vapor extraction (SVE) system with two granular activated carbon (GAC) canisters to collect and control VOC and HAP emissions from beneath the facility's concrete floor.

1.3 Description of the activities allowed by this permit action

This permit action is for a Major Amendment due to (1) the establishment and change to federally enforceable emission caps to avoid major source status, (2) significant amendments to existing monitoring, reporting and record keeping requirements in the permit, and (3) establishment of permit conditions based on a case-by-case determination of emission limitation based on source-specific ambient impact analysis for criteria pollutants and air toxics. The MPCA has a combined operating and construction permitting program under Minn. R. ch. 7007. Under that authority, this permit action authorizes construction. The following changes and modifications are authorized by this permit action.

Acknowledgement of the Stipulation Agreement (Agreement) and Administrative Order (Order). The permit acknowledges the Agreement and the Order as a clarification to document that these enforcement actions are in effect at the time of permit issuance and are not terminated with the issuance of the permit. The permit includes specific provisions from the Agreement, executed March 1, 2019, and Administrative Order, signed January 17, 2020, which are to be continued into the permit term. These provisions are compliance demonstration requirements that were deemed technically appropriate and necessary to ensure continued compliance with the permit limitations as required under Minn. R. 7007.0800. These conditions will remain as part of the permit independently of the status of the Agreement and the Order.

Addition of emission units previously identified as insignificant activities. Several emission units at the facility were previously identified as insignificant activities under Minn. R. 7007.1300, subp. 3(F) (formerly Minn. R. 7007.1300, subp 3(I)), including die casting units, natural gas-fired heating equipment, distillation equipment, and cooling towers. As a result of Title V modeling, the facility accepted emission limits to demonstrate compliance with applicable National Ambient Air Quality Standards (NAAQS). Since these units were modeled explicitly, they have been added to the subject item inventory as emission units, and therefore are not considered insignificant activities. Additionally, some lead processing units with control equipment previously designated as insignificant activities based on their controlled emissions that were not subject to enforceable permit conditions in the previous permit, and therefore, are not insignificant activities under Minnesota Rules.

Addition of limits on t-DCE, PM_{10}, $PM_{2.5}$, NO_2, and lead emissions. The technical review of the permit application required an air emissions risk analysis (AERA) and dispersion model to determine the health risks of t-DCE and lead emissions from the facility. The TCE ban, authorized under Minn. Stat. 116.385, requires that facilities replacing TCE with other chemicals, such as Water Gremlin, must demonstrate that the new chemical is less toxic to human health. This AERA satisfies the requirement legislated in Minn. Stat. 116.385, subd. 3, obligating the MPCA to ensure that solvents selected to replace TCE at facilities remain protective of human health and the environment. Through the permitting process, the facility was required to conduct Title V modeling to determine modeled compliance with applicable PM_{10}, $PM_{2.5}$, NO_2, and lead NAAQS. The results of these analyses required emissions and operation limits such that the facility remains in compliance with all applicable PM_{10}, $PM_{2.5}$, NO_2, and lead NAAQS and below the heath benchmarks for t-DCE and lead.

Addition of continuous emissions monitoring system (CEMS) in the battery terminal post coater stack. The permit includes a VOC CEMS in the battery terminal post coater stack (STRU 73). This was initially required by the Agreement to monitor the occurrence of emissions from the coaters and quantify the amount of t-DCE (a type of VOC) leaving the coaters to verify compliance with solvent use limits required by the Agreement. Permanent operation and maintenance of a VOC CEMS, recordkeeping of CEM results and CEM correlation validation is required by the permit as a supplement to the main compliance demonstration method of recordkeeping of daily material usage. Other supplemental requirements include quarterly VOC solvent inventory audits, and audit reporting.

Addition of solvent vapor remediation system. The permit includes the addition of the sub-slab depressurization and solvent vapor extraction system with associated GAC canister control equipment to

capture existing (and future) sub-slab solvent vapor contamination identified during the remedial investigation. The permit includes limits on emissions of target chlorinated compounds, operation, monitoring, recordkeeping, and reporting requirements. The permit includes provisions specifying the conditions under which operation of the solvent vapor remediation system and associated control equipment may be discontinued as approved by the MPCA Remediation Division.

Addition of ambient monitors for VOCs. Operation of approved ambient air VOC monitors required by the Agreement are to be operated for at least two years following permit issuance to ensure t-DCE emissions remain below health risk benchmarks at all times. The initial monitoring plan is what the Agreement requires, and the Permittee is required to revise the monitoring plan in accordance with parameters defined in the permit. After the revised ambient monitoring plan is approved, the Permittee may change the location of the monitors, the frequency of sampling and the analytical reporting requirements. Conditions that must be met to discontinue VOC monitoring are also specified. The facility is responsible for managing each monitor's operation, maintenance, recordkeeping, and reporting of results as described later in this permit.

Recurring testing to verify coating rooms are operating as total enclosures. In order to ensure all VOC solvent vapors from coating operations are being vented to the common stack (STRU 73), the permit requires that a minimum negative pressure differential be maintained, including continuous monitoring of coating room pressure and alarms (audible and visual) that alert when coating room pressure is above the set point established by the accepted standard practice under the permit. The permit also requires daily inspection of enclosure integrity, annual testing of the enclosure to ensure it meets the definition described above following U.S. Environmental Protection Agency (EPA) Method 204 in Appendix M of 40 CFR Part 51, and maintenance of coating room floor sealant to avoid further sub-slab contamination due to vapor intrusion or spills.

Solvent authorized for use in coating operations. Permit No. 12300341-003 authorized the use of trichloroethylene (TCE), a VOC and HAP, as an allowable solvent in coating operations. Water Gremlin has eliminated the use of TCE at the facility and is using t-DCE as the TCE replacement. Permit No. 12300341-101 prohibits the use of TCE in any facility operations, and changes the allowable VOC-based coating solvent formula to less than or equal to 90 percent by weight VOC. This permit specifically authorizes VOC coatings containing t-DCE. All of the VOC in t¬-DCE coatings is conservatively assumed to be t-DCE, and the balance of the material is comprised of greater than or equal to 10 percent by weight of non-HAP, non-VOC (inert) constituents. Changes to any solvent formulation that increases the amount of regulated pollutants, or air toxics for which there are health benchmarks or adds new pollutants, may require a major amendment described under Minn. R. 7007.1500.

Incorporation of minor amendment authorizing operation of EQUI 82, EQUI 219, and EQUI 220, and authorization to install additional UV coaters. Air Quality Permit No. 12300341-004 authorized construction and operation of a battery terminal post coater (EQUI 82) utilizing a non-t-DCE, very low VOC, UV-cured coating technology. The minor amendment has been incorporated into this permit, including the emission limits for PM_{10} and $PM_{2.5}$at STRU 73 established by the refined dispersion model. In spite of the effective increase in allowable emissions from EQUI 82 compared to what was authorized by the minor amendment, the refined model demonstrates compliance with applicable PM_{10} and $PM_{2.5}$ NAAQS for the total facility. The refined model includes revised emission limits for EQUI 82 as well as allowable emissions for future UV coaters.

Authorization to convert t-DCE VOC coaters to UV or water-based coating, and conversion to other application methods. Existing t-DCE VOC coaters were converted to use a water-based coating or UV coating application to further reduce VOC emissions. These were added to the permit and their emissions are regulated for VOC, PM_{10}, and $PM_{2.5}$. The permit allows for the conversion of t-DCE VOC coaters to use water-

based or UV coating, and conversion of water-based coaters to UV coaters, or vice versa. The permit allows conversion of dip/drip water-based coaters to water-based spray application methods, and vice versa. The permit prohibits the conversion of water-based or UV coaters to t-DCE VOC coaters, the addition of more t- DCE VOC coaters, or the increase in capacity of existing t-DCE VOC coaters without a major amendment.

Modification of VOC emissions calculation procedure and addition of t-DCE emissions calculation procedure. Permit No. 12300341-101 authorizes calculation of VOC emissions primarily based on solvent usage records, including an audit approach based on solvent purchase and inventory records, and reconciling results from the CEMS measurements to further validate solvent usage records. Due to past compliance issues with the method in Permit No. 12300341-003, and to increase the accuracy of VOC emissions accounting, Permit No. 12300341-101 requires daily recordkeeping of several parameters related to solvent usage, including VOC solvent usage, VOC solvent recovered from the distiller, water-based coating usage, UV coating usage, VOC waste, and the VOC/t-DCE 365-day rolling sum. MPCA is also requiring VOC solvent purchase inventory records and CEMS measurements at the coating room stack to verify the solvent usage records are reliable. VOC emissions from evaporation loses outside the coating rooms will be included based on measured indoor air concentrations as described in this permit. Emissions of t-DCE will be conservatively assumed to be equal to VOC emissions from the t-DCE VOC coaters.

Dismantlement and removal of Fluidized Bed Solvent Recovery (carbon adsorption) unit. The facility had a carbon adsorption unit, originally installed in 2002, to control and recover TCE emissions from coating operations, which were then reconditioned and reused in the coating process. A larger carbon adsorption unit was installed in December 2018 to solve efficiency issues identified in the Environmental Audit. As a result of enforcement of the Agreement, TCE use was banned from the facility and an attempt was made to retrofit the new carbon adsorption unit to recover t-DCE, which became the replacement solvent. The initial performance test revealed a control efficiency far less than warranted by the manufacturer due to the unit being originally designed for TCE recovery. After numerous attempts to obtain a consistent control efficiency greater than or equal to 70 percent as proposed in the application, the facility abandoned the adsorption unit as a feasible control device in its operations; therefore, the carbon adsorption unit has been removed from the permit. The permit also authorizes the replacement of the stack associated with the removed carbon adsorption unit. The facility will demonstrate compliance with VOC and t-DCE emission limits through recordkeeping of solvent usage and computation of emissions based on records and default measured emissions outside the coating rooms. The emission calculations are defined in the permit. The compliance demonstration for limits t-DCE effectively limits the coating solvent usage.

Removal of VOC and HAP emission limit precap. Permit No. 12300341-003 allowed for installation and operation of additional VOC battery terminal post coaters without prior authorization from the MPCA. This is known as a “Precap” type of permit. Permit conditions pre-authorizing construction and operation of additional t-DCE VOC coaters have been removed and will not be authorized by Permit No. 12300341-101. The replacement of existing VOC coaters with larger capacity VOC coaters will not be authorized by this permit. The permit pre-authorizes addition of water-based (very low VOC content) and UV-cured coating units.

1.4 Description of notifications and applications included in this action

Table 2. Notifications and applications included in this action

Date received	Application/notification type and description
06/30/2016	Administrative Amendment (IND20160001)
10/23/2018	Major Amendment (IND20180001)
02/08/2019 (supplemental information received 8/30/2019, 2/21/2020, 4/21/2020, 11/19/2021, 12/6/2021, and 1/10/2022. Conforming Application received 7/1/2022)	Major Amendment (IND20190001)
04/02/2021	Notification of Installation of Controls (IND20210001)

1.5 Facility emissions:

The net emission changes resulting from this permit action are reductions in allowable emission. This is because the small increases of emissions allowed for the conversion of coaters (less than 0.05 tons per year of $PM_{10}$and $PM_{2.5}$and 1.07 tons per year of VOC) is countered by emission reductions from existing equipment due to the combined effect of new operating limitations and the installation of additional control equipment required by the permit. It is difficult to ascertain the exact emission reduction in allowable emissions because many of the existing emission units subject to new operating limitations and additional control equipment were not included in permit 12300341-003, and other changes in emission units have occurred since permit 12300341-003 was issued. Under Permit No. 12300341-101, the revised total facility limited emissions are listed in Table 3.

Table 3. Total facility potential to emit summary

	PM tpy	PM_{10} tpy	$PM_{2.5}$ tpy	SO_2 tpy	NO_x tpy	CO tpy	Lead tpy	CO_2e tpy	VOC tpy	Single HAP tpy	All HAPs tpy
Total Facility Unlimited Potential Emissions	~~198.11~~2 04.65	~~195.08~~1 96.44	~~194.31~~1 94.32	0.16	20.99	17.24	1.86	24,328	537.~~79~~8	1.86	2.14
Total Facility Limited Potential Emissions	~~8.72~~15.8 3	~~5.70~~7.63	~~4.93~~5.52	0.1~~65~~	~~19.60~~20. 99	~~16.07~~17. 24	0.025	24,328~~2 2664~~	93.~~10~~17	0.3~~74~~	0.~~39~~41
Total Facility Actual Emissions (2020)	1.941	3.620	2.033	0.009	1.356	1.128	0.010	*	29.40	*	

* Not reported in MN emission inventory.

Commented [A2]: PTE revisions are noted. Compare to latest GI-07.

Table 4. Facility classification

Classification	Major	Synthetic minor/area	Minor/area
PSD		X	
Part 70 Permit Program		X	
Part 63 NESHAP			X

1.6 Changes to permit

The MPCA has a combined operating and construction-permitting program under Minnesota Rules Chapter 7007. These rules mandate certain conditions that must be included in every permit, and also provide that MPCA has discretion to include additional conditions that the Agency determines to be necessary to protect human health and the environment. Under this authority, the following changes and additions to the permit are made through this permit action:

- The permit has been updated to reflect current MPCA templates and standard citation formatting;
- One-time testing requirements, initial compliance requirements, and other requirements that have been completed or no longer apply have been deleted;
- Some requirements have been reordered to help with clarity (i.e. units with similar emission limits are grouped);
- TCE removed as an allowable solvent for use in facility operations;
- Added authorization to use HAP-free VOC solvent formula in coating operations;
- Removed synthetic minor emission limits for total and single HAPs;
- Removed the carbon adsorption unit from the permit subject item inventory;
- Added authorization to convert t-DCE VOC coaters to use water-based and/or ultraviolet (UV)-cured coating only;
- Changed calculation procedure to demonstrate compliance with VOC and t-DCE emission limits;
- Removed VOC Pre-Cap pre-authorizing construction of additional VOC coaters;
- Added existing emergency generator, including applicable federal and state requirements;
- Added PreCap limit for combustion units used for air conditioning and space heating in North Building (STRU 38);
- Added ambient air monitors for VOC (t-DCE) and operation of ambient monitoring network;
- Added operation and maintenance of the sub-slab vapor remediation system;
- Added installation, operation, and maintenance of a permanent VOC (CEMS) at STRU 73;
- Added coining units and tin melt pot to the subject item inventory;
- Added die casting units and associated control equipment to the subject item inventory with applicable requirements;
- Added emission limits and compliance demonstrations for PM_{10}, $PM_{2.5}$, and lead based upon NAAQS modeling and AERA;
- Added modifications to stack parameters and control equipment required for NAAQS and AERA compliance;
- Added testing and monitoring requirements for coating room total enclosures and emissions;
- Added testing and monitoring requirements for several lead processing sources;
- Added research and development (R&D) and prototype coaters to subject item inventory;
- Added cooling towers and paved roads as fugitive emissions sources;
- Added replacement of the battery terminal post coater stack (STRU 73)
- Added solvent distillation unit, including operational requirements, emissions calculations, and recordkeeping;
- Added specific permit requirements in enforcement of the March 1, 2019 Stipulation Agreement and the January 17, 2020 Administrative Order.
- Replacement of the coating room's stack

Commented [A3]: This should apply to the Stipulation Agreement and Administrative Order as well, and these should be removed from the permit.

Commented [A4]: All unnecessary and burdensome.

2. Regulatory and/or statutory basis

2.1 New source review (NSR)

New Source Review is the federal air permit construction program authorized by the Clean Air Act. NSR includes the Prevention of Significant Deterioration (PSD) permit program for pollutants emitted in an area

that is in attainment for that pollutant, and the nonattainment new source review permit program for pollutants from sources located in an area that is not in attainment for that pollutant.

The permit carries forward limits on the facility for VOC such that it remains a minor source under NSR regulations. The facility uncontrolled emissions of PM/PM_{10}/$PM_{2.5}$are below NSR major source thresholds.

- **Listed source evaluation**
  The facility was evaluated to determine whether or not it would be considered a secondary metal production plant defined by the Clean Air Act. Secondary metal production plants are a listed source under 40 CFR § 52.21(b)(1)(iii) and subject to the 100 ton per year major source threshold. Applicability determinations issued by EPA describe the criteria under which a facility would be considered a secondary metal production facility. The major themes in these determinations include smelting and refining activities using furnaces, and which part of the process produces the most emissions. In the case of Water Gremlin, lead ingots purchased from a local refinery are melted at relatively low temperatures, which does not constitute smelting. In addition, the majority of emissions from the facility come from the die casting process, not melting. Therefore, it was reasonable to conclude that Water Gremlin is not a listed source under PSD regulations.

2.2 Part 70 permit program

The permit carries forward limits on the facility for VOCs and includes new limits on PM_{10} and $PM_{2.5}$such that it remains a non-major source under the Part 70 permit program.

2.3 New source performance standards (NSPS)

The permit includes the addition of an emergency compression ignition reciprocating internal combustion engine (CI RICE) subject to requirements of 40 CFR pt. 60, subp. IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

2.4 National emission standards for hazardous air pollutants (NESHAP)

The facility is prohibited from using HAP-containing materials in coating operations; therefore, the facility is an area source of HAPs under 40 CFR pt. 63 and no major source NESHAPs apply. However, it was determined that even though the facility is not subject to 40 CFR pt. 63, subp. MMMM - National Emission Standards for Hazardous Air Pollutants for Surface Coating of Miscellaneous Metal Parts and Products (subp. MMMM), the limits and monitoring requirement in Subp. MMMM are reasonable and appropriate controls to establish under Minn. R. 7007.0800 for Coating Rooms 1, 2, and 3 to ensure these rooms operate as permanent total enclosures. It is important to ensure total enclosure operation because the dispersion modeling for particulate matter and t-DCE assumed all emissions from coating rooms were captured and emitted from the coating room stack (STRU 73). Note that t-DCE is not a listed HAP.

The emergency generator is subject to the standards of 40 CFR pt. 63, Subp. ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. Since the date of construction was in 2012, compliance with this standard is achieved through compliance with 40 CFR pt. 60, subp. IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

On February 23, 2022, the EPA proposed a rule to amend the 2007 NESHAP for Lead Acid Battery Manufacturing Area Sources (40 CFR Part 63, subp. PPPPPP), and the 1982 NSPS for Lead Acid Battery Manufacturing Plants (40 CFR Part 60, subp. KK). This rule would expand the applicability provisions in the area source NESHAP to facilities that make lead bearing battery parts or process input material including, but not limited to, grid casting facilities and lead oxide manufacturing facilities. It also updates the NSPS by revising lead emission limits for several types of operations at new, reconstructed, or modified sources. This rule is not yet finalized. Therefore, it is not known if these revisions will apply to Water Gremlin. However, if

Commented [A5]: This paragraph is unnecessary.

the final rule does apply to the Water Gremlin facility, then Water Gremlin must comply with the requirements of the NESHAP and/or NSPS even if those conditions are not specifically listed in its air permit as a permit condition. Additionally, if the rules are applicable to Water Gremlin and there are three or more years remaining in the permit term when the rules become effective the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3

2.5 TCE ban

On May 16, 2020, Governor Walz signed the "White Bear Area Neighborhood Concerned Citizen Group Ban on TCE" Act (Minn. Stat. § 116.385), named for the residents that worked to get legislation passed to ban TCE. The law bans the use of TCE on or after June 1, 2022, in any facility that is required to have a state air permit, including manufacturing, processing, and cleaning processes. TCE is widely used in industrial and commercial processes and has some limited uses in consumer and commercial products. It is used as a solvent for degreasing metal parts during the manufacture of a variety of products and can be found in consumer products, including some wood finishes, adhesives, paint and stain removers, and brake cleaner. TCE can also be used in the manufacturing of other chemicals. TCE is categorized as a HAP by the Federal Clean Air Act (CAA) and a VOC by federal regulations. Minn. Stat. § 116.385, subp. 2, requires that "cessation of use must be made enforceable in the air emissions permit for the facility…" by June 1, 2022. This permit action prohibits the use of TCE at the facility as required by the TCE ban legislation.

Minn. Stat. § 116.385, subd. 3, requires that facilities replacing TCE with other chemicals must demonstrate that the new chemical is less toxic to human health. Water Gremlin replaced TCE based coating with t-DCE-based coating and this permit includes conditions to ensure this replacement is less toxic to human health.

Commented [A6]: t-DCE is less toxic than TCE, regardless of the permit levels. It's noncancer inhalation benchmark is more than an order of magnitude higher than TCE's. Further, TCE is a carcinogen and t-DCE is not.

2.6 Air Emissions Risk Analysis (AERA)

An AERA was completed by MPCA to ascertain the impact of t-DCE and lead emissions on inhalation health benchmarks established by the Minnesota Department of Health (MDH). The permit establishes new limits on t-DCE and lead that are protective of each inhalation health benchmark. Other air toxics present in UV coatings and those measured below detection levels in water-based coatings were evaluated by the AERA and deemed to not be a risk to human health.

2.7 2019 and 2020 enforcement actions

As the result of an investigation and enforcement action by the MPCA, a Stipulation Agreement between Water Gremlin and the MPCA was executed on March 1, 2019. The Stipulation Agreement outlines the violations alleged by the MPCA and includes a civil penalty. Part 10 of the Agreement included numerous corrective actions and requirements to be completed by Water Gremlin. The Permittee was required to complete all corrective actions and requirements prior to issuance of this permit. A copy of the executed Stipulation Agreement may be found in Attachment 4 to this TSD. The Stipulation Agreement will continue to be in effect until the MPCA terminates it independently of the effective date of the issuance date for Permit No. 12300341-101.

An Administrative Order was issued to Water Gremlin on August 22, 2019 (2019 Order) for the facility to immediately cease TCE-based VOC coating operations after the remediation investigation revealed soil vapor contamination beneath the facility. A second Administrative Order was issued on January 17, 2020 (2020 Order) outlining the steps necessary for the facility to resume non-TCE VOC coating operations. The 2020 Order included corrective actions to be completed before the facility could restart coating operations, as well as additional operating requirements that must be followed until the 2020 Order is terminated. Water Gremlin completed the required corrective actions that were preconditions to resume non-TCE VOC coating operations under the 2020 Order on March 1, 2019. The permit requires continuous compliance with the 2020 Order until it is terminated by the MPCA independently of the effective date of issuance of

Permit No. 12300341-101. Copies of the 2019 and 2020 Administrative Orders are included as Attachment 5 to this TSD.

The permit acknowledges the Stipulation Agreement and Administrative Order as a clarification, so members of the public are assured these are not automatically terminated with the issuance of Permit No. 12300341-101. In addition, this acknowledgement will be helpful for compliance and enforcement staff such that it is readily clear the Water Gremlin facility is subject to other MPCA enforcement documents besides the permit. The permit includes a sunset provision for the Stipulation Agreement and Administrative Order when MPCA terminates these two enforcement documents independently from the permit issuance.

The permit includes several specific provisions from the Agreement and Administrative Order that are to be continued into the permit term independently of the status of the Agreement and Administrative Order. These are compliance demonstration requirements that were deemed technically appropriate and necessary to ensure continued compliance with the permit limitations as required under Minn. R. 7007.0800.

Commented [A7]: The Stipulation Agreement and Administrative Order should be terminated as Water Gremlin met all the necessary conditions. It is unreasonable to have multiple and conflicting compliance documents, which lead to ambiguity, confusion, and inefficiency. Specifically, for example, the Administrative Order and the air permit require different methods for calculating total VOC emissions.

Commented [A8]: This paragraph explains again why the Administrative Order and Stipulation Agreement should be terminated upon issuance.

2.8 Approved Replicable Methodology (ARM)

ARM was defined as part of the EPA's 2009 Flexible Air Permitting Rule at 40 CFR subp. 70.2 and is part of MPCA's approved state and Title V permitting program. ARM language includes the permit terms that specify a protocol for re-setting a parameter required by the permit as defined at Minn. R. 7007.0100, subp. 6b. Per MPCA guidance, when the initial parameter is known or can reasonably be determined upfront, and where the permit includes periodic testing which may re-set the parameter, the permit should contain the parameter, as well as an ARM or protocol, for revising the parameter through testing. As long as the Permittee is implementing the ARM as required by the permit, the permit does not need to be reopened to revise the parameter. Every level of permit amendment (from administrative to major) can be used to incorporate revised parameters that were approved via an ARM. Alternatively, in the absence of ARM language in the permit, a reopening for establishing the revised parameter would require a major amendment process to be incorporated into the permit due to the case-by-case and site-specific nature of the parameter being revised.

The ARM itself is a case-by-case and site-specific requirement and is a regulatory construct that is also used in state permits. Therefore, the establishment or revision of the ARM provisions requires a major amendment process under Minn. R. 7007.1500, likely triggering one or more of the following: subp. 1(A) (revision to monitoring), 1(B) (case-by-base limit), and 1(C) (used for assuring compliance with a limit taken to avoid an applicable requirement). The permit includes ARM language to reset parameters such as emission factors, transfer efficiencies and exhaust flow rates.

2.9 Commercial disclosure regarding facility operations

The MPCA requires that the Permittee conduct a meeting annually to disclose to the community information regarding the facility's operations due to the significant public interest and concern about the facility's prior and ongoing operations. Prior enforcement actions involved potential health impacts to the community located near the facility. Information reported by the public was also connected to air emissions and take-home lead issues. The Permittee has represented to the MPCA that it intends to reduce air emissions through reductions in t-DCE use. These meetings are an opportunity for the public to understand the Permittee's operations that may impact the community, including any changes the facility is making to reduce air emissions, and to learn about its regulatory compliance status. The MPCA has determined that these meetings are necessary for the ongoing oversight of the Permittee's operations and will inform the MPCA's finding that the Permittee will operate its facility in compliance with its permit conditions. These meetings are a reasonable method for obtaining and exchanging information, will aid oversight, and supplement inspections conducted at the facility. MPCA believes annual community meetings are necessary for the protection of human health and the environment.

Commented [A9]: There is no provision under Minnesota law that requires the Permitee to conduct annual meetings, and no such requirement should be included in the permit.

2.10 Regulatory overview

Table 5. Regulatory overview of units affected by the modification/permit amendment

Subject item*	Applicable regulations	Rationale
TFAC 1 (Water Gremlin Co.)	Minn. Stat. 116.385	Trichloroethylene (TCE) Ban. The Permittee may not use trichloroethylene at its permitted facility after June 1, 2022, including in any manufacturing, processing, or cleaning processes, except as described under the statute. The permittee is required to demonstrate that the solvent that replaces TCE is less toxic to human health.
	Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)	Air Emissions Risk Analysis (AERA) and NAAQS modeling. The permit establishes conditions in which revised ~~AERA~~ RASS and dispersion modeling analyses must be done following changes to the parameters established by the AERA and dispersion model.
		Equivalent or Better Dispersion Modeling (EDM). Requirements specifying conditions in which a permit modification triggers the requirement to remodel pollutants described in Appendix C.
		Ambient Air Monitoring. Operation and maintenance of an ambient air monitoring network around the facility demonstrates continuous compliance with the applicable t-DCE health benchmark.
		General Public Preclusion Plan. Implementation and maintenance of the plan to prevent the general public from entering the ambient air boundary established during dispersion modeling.
	Minn. R. 7007.0800, subp. 2(B), Minn. Stat. 116.07, subd. 9(2)]	Annual Community Engagement Meeting to update the community and answer questions on facility operations and overall compliance with environmental permits and regulations.
COMG 1 (VOC and 1,2 (trans) Dichloroethylene Limits and VOC Coater, Water-Based Coater, UV Coater, and Solvent Distillation Operation Requirements)	40 CFR § 52.21(b)(1)(i)	Prevention of Significant Deterioration (PSD). Limits taken to avoid major source under PSD for all non-combustion emissions of VOC, including uncaptured emissions.
	40 CFR § 70.2	Limits to avoid Part 70. The permit limits VOC emissions to less than Part 70 thresholds. Requirements include monthly compliance calculations based on daily usage records, purchase, and inventory recordkeeping.
	Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385 subd. 3	Air Emissions Risk Analysis (AERA). The AERA, the evaluation of ambient air measures of t-DCE and records of actual operation were used to established permit limits on t-DCE emissions in which ambient concentrations remain below health benchmarks established by the Minnesota Department of Health. Requirements include daily compliance calculations, daily recordkeeping of t-DCE usage, recovery from the distillation unit, t-DCE sent out of the facility as waste and t-DCE emitted from outside the coating rooms. It is a limit based on a 365-day rolling sum due to use of t-DCE at the facility being so close to the limit.

Commented [A10]: This should only reflect required updates to the RASS and NAAQS modeling. MPCA is the author of the AERA for this facility, not Water Gremlin.

Commented [A11]: Modeled compliance and usage tracking make this provision unnecessary.

Commented [A12]: There is no provision under Minnesota law that requires the Permitee to conduct annual meetings, and no such requirement should be included in the permit. This comment applies to all similar requirements in the permit.

Subject item*	Applicable regulations	Rationale
	Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7007.0800, subps. 4-6, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3	t-DCE VOC Solvent Formulation. The permit limits the allowable VOC solvent formulation to that which was characterized by the AERA. The permit specifies the conditions under which the formula may be changed.
		Reconciliation of Predicted Stack Concentration and CEMS Readings. The Permittee must reconcile predicted concentrations and CEMS readings to verify usage records do not need an audit to ensure reliability of records.
		t-DCE purchase and inventory records audit. Each calendar quarter, the Permittee must audit purchase records and existing inventory of 1,2-(trans-) Dichloroethylene VOC-containing material, and 1,2-(trans-) Dichloroethylene VOC-containing material usage records, and keep records for each quarterly audit.
		Water-Based Coating Formulation. The permit limits the allowable water-based coating formulation to that which was characterized by the AERA. The permit specifies the conditions under which the formula may be changed.
		UV Coating Formulation. The permit limits the allowable UV coating formulation to that which was characterized by the AERA. The permit specifies the conditions under which the formula may be changed.
		Conversion of t-DCE VOC Coating. Pre-authorization allowing the conversion of coaters using t-DCE VOC coating to use water-based or UV coating only.
		Conversion of Application Method of Water-Based coaters. Pre-authorization to convert water-based spray coaters to dip/drip coaters, and vice versa.
		Conversion of Water Based Coaters and UV Coaters. Pre-authorization allowing the conversion of coaters using water-based coating to use UV coating and vice versa.
		Replacement and Addition of Water Based Coaters and UV Coaters. Pre-authorization allowing the replacement and addition of coaters using water-based and UV coatings.
		Replacement of Existing t-DCE VOC Coaters. Pre-authorization allowing the replacement of existing t-DCE VOC coaters of equal or lower design capacity and that does not increase emissions of t-DCE, PM_{10}, or $PM_{2.5}$.
		Prohibition to add new t-DCE VOC coater that are not replacing existing t-DCE VOC coaters.
		Change of location of Water-Based Dip/Drip coaters. Pre-authorization allowing the change of location of existing water-based dip/drip coaters to locations outside the coating rooms exhausting through STRU 73.
		t-DCE VOC Storage and Transfer. Handling and storage requirements to minimize emissions from evaporation loses and spills.
		t-DCE VOC Coater Installation and Maintenance. Specifications for VOC coater installation and maintenance as required by the Administrative Order.

Commented [A13]: Usage records are required to be maintained by the company. This provision is burdensome and unnecessary, and may not provide reliable data.

Subject item*	Applicable regulations	Rationale
COMG 2 (PM10 and PM2.5: Limits and Compliance Requirements for Ultraviolet (UV) Battery Terminal Post Coaters)	40 CFR § 52.21(b)(1)(i)	Prevention of Significant Deterioration (PSD). Limits taken to avoid major source under PSD for VOC emissions. Requirement requires to comply with requirements in COMG 1.
	40 CFR § 70.2	Limits to avoid Part 70. The use of control equipment complying with COMG 14 is needed to maintain the PM_{10} and $PM_{2.5}$ emissions at less than Part 70 thresholds. Other requirements include daily compliance calculations, and recordkeeping. The calculations are based on approved emission factors and required control efficiencies. The daily calculations are required because the PM_{10} and $PM_{2.5}$ limits for compliance with NAAQS serve the purpose of also demonstrating compliance with this requirement as well.
	Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]	NAAQS Modeling. The dispersion model establishes permit limits on PM_{10} and $PM_{2.5}$ emissions such that ambient concentrations remain below NAAQS thresholds. Requirements include use of control equipment, maintenance of dispersion characteristics, coating usage recordkeeping, and daily compliance calculations based on approved emission factors and required control efficiencies. The daily calculations are required because the PM_{10} and $PM_{2.5}$ are 24-hour standards.
COMG 4 (PM10 and PM2.5: Limits and Compliance Requirements for VOC Spray Battery Terminal Post Coaters)	40 CFR § 52.21(b)(1)(i)	Prevention of Significant Deterioration (PSD). Limits taken to avoid major source under PSD for VOC emissions. Requirement requires to comply with requirements in COMG 1.
	40 CFR § 70.2	Limits to avoid Part 70. The use of control equipment complying with COMG 14 is needed to maintain the PM_{10} and $PM_{2.5}$ emissions at less than Part 70 thresholds. Other requirements include daily compliance calculations, and recordkeeping. The calculations are based on approved transfer efficiencies and required control efficiencies The daily calculations are required because the PM_{10} and $PM_{2.5}$ limits for compliance with NAAQS serve the purpose of also demonstrating compliance with this requirement as well.
	Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]	NAAQS Modeling. The dispersion model establishes permit limits on PM_{10} and $PM_{2.5}$ emissions such that ambient concentrations remain below NAAQS thresholds. Requirements include use of control equipment, minimum transfer efficiency, maintenance of dispersion characteristics, daily coating usage recordkeeping, and daily compliance calculations. The daily calculations are required because the PM_{10} and $PM_{2.5}$ are 24-hour standards.
COMG 5 (Permanent Total Enclosure Requirements: Coating Rooms)	Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)	Coating Room Pressure Drop. Operation maintenance of each coating room such that it remains a permanent total enclosure, and that the minimum pressure drop remains below the limit established in the permit, to ensure all coating emissions vent to STRU 73 as characterized by the AERA.
	Minn. R. 7007.0800, subp. 2(A) & (B)	Coating Room Pressure Drop Continuous Monitoring Device. Installation, operation, and maintenance of a pressure drop monitoring device to monitor the pressure drop across each coating room enclosure.

Subject item*	Applicable regulations	Rationale
		Coating Room Pressure Alarm. Installation, operation, and maintenance of an alarm that triggers when the pressure drop limit of any coating room is exceeded.
		Weekly Reporting. Reports of deviations from the required pressure drop limit must be reported weekly.
		Retro-Coat Vapor Intrusion System. Coating room floors where t-DCE VOC coaters operate are required to be coated in order to minimize vapor intrusion into concrete surfaces.
		Retro-Coat Vapor Intrusion System Inspections. Requirement for daily inspection of coating room floors where t-DCE VOC coaters operate for degradation, including recordkeeping and reporting.
	Minn. R. 7017.2005 – 7017.2025	Performance testing within 30 days of permit issuance and annually thereafter to ensure the system operates as a total enclosure.
COMG 6 (Indirect Heating Equipment Rule Requirements))	Minn. R. 7011.0515	Standards of Performance for New Indirect Heating Equipment. • Construction of the unit was on or after January 31, 1977; • The unit burns gaseous fuels; • The facility is located inside the cities in Table II of the rule; • The facility has less than or equal 250 MMBtu/hr of indirect heating equipment.
COMG 7 (Industrial Process Equipment Rule)	Minn. R. 7011.0715	Standards of Performance for post-1969 Industrial Process Equipment. Equipment for which there is no other promulgated performance standard is subject to the opacity and PM limits in this rule. Construction of the unit was on or after July 9, 1969.
COMG 8 (PM10 and PM2.5: Limits and Compliance Requirements for Water-Based Spray Battery Terminal Post Coaters)	40 CFR § 52.21(b)(1)(i)	Prevention of Significant Deterioration (PSD). Limits taken to avoid major source under PSD for VOC emissions. Requirement requires to comply with requirements in COMG 1
	40 CFR § 70.2	Limits to avoid Part 70. The use of control equipment complying with COMG 14 is needed to maintain the PM_{10} and $PM_{2.5}$ emissions at less than Part 70 thresholds. Other requirements include compliance calculations, and recordkeeping.
	Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)	NAAQS Modeling. The dispersion model establishes permit limits on PM_{10} and $PM_{2.5}$ such that ambient concentrations remain below applicable NAAQS. Requirements include use of control equipment, minimum transfer efficiency, maintenance of dispersion characteristics, coating usage recordkeeping and compliance calculations.

Commented [A14]: The facility is not subject to 40 CFR 63 subp. MMMM and should not be required to meet the standards of that NESHAP. Annual testing of the total enclosure should be replaced with testing every five years.

Subject item*	Applicable regulations	Rationale
COMG 9 (Sub-Slab Vapor Remediation System: Operation Requirements)	Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)	Air Emissions Risk Analysis (AERA). Controlled and uncontrolled emissions from sub-slab vapor remediation system operation required by the Stipulation Agreement were characterized by the AERA. The permit requires operation and maintenance of the sub-slab vapor remediation system and control equipment in accordance with the MPCA Remediation Division's requirements. The permit defines an alternative uncontrolled emission rate as a point of reference for future analysis. The permit authorizes the removal of the activated carbon canisters with written approval from the MPCA Remediation Division.
COMG 10 (NOx: North Building Space Heating Capacity Limits)	Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)	NAAQS Modeling and AERA. The permit limits the total heat input from space heaters as well as the months of operation to what was assumed in the dispersion model. The permit requires the facility to maintain an inventory of combustion units at the facility as well as daily records of operation.
COMG 11 (Mist Eliminator/HEPA Filter and Electrostatic Precipitator Control Equipment Train – Melt Pots)	40 CFR § 70.2	Limits to Avoid Part 70. Control efficiency and other operating requirements to limit $PM_{10}/PM_{2.5}$ potential to emit to below Part 70 thresholds. Limits reflect that the units have total enclosures connecting to control equipment. Permit specifies that replacement HEPA filters must meet the COMG 11 requirements.
	Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)	NAAQS Modeling and AERA. The permit requires the emissions from melting pots to be controlled by pollution control equipment meeting the conditions in COMG 11. The permit requires installation, operation, and maintenance of control equipment at the minimum overall control efficiency assumed in the dispersion model.
COMG 12 (Mist Eliminator/HEPA Filter and Electrostatic Precipitator Control Equipment Train – Die Casting)	40 CFR § 70.2	Limits to Avoid Part 70. Control efficiency and other operating requirements to limit $PM_{10}/PM_{2.5}$ potential to emit to below Part 70 thresholds. Limits reflect that the units have total enclosures. Permit specifies that replacement HEPA filters must meet the COMG 12 requirements.
	Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)	NAAQS Modeling and AERA. The permit requires the emissions from die casting units to be controlled by pollution control equipment meeting the conditions in COMG 12. The permit requires installation, operation, and maintenance of control equipment at the minimum overall control efficiency assumed in the dispersion model.
COMG 13 (Direct Heating Equipment Rule Requirements)	Minn. R. 7011.0610	Standards of Performance for Direct Heating Equipment. • Construction of the units was on or after July 9, 1969; • The units burn gaseous fuels; • The facility is located in the Twin Cities; and • The facility has less than or equal 250 MMBtu/hr of direct heating equipment.
COMG 14 (HEPA Filters – Spray Coaters)	40 CFR § 70.2	Limits to Avoid Part 70. Control efficiency and other operating requirements to limit $PM_{10}/PM_{2.5}$ potential to emit to below Part 70 thresholds. Limits reflect that the units have total enclosures connecting to control equipment. Permit specifies that replacement HEPA filters must meet the COMG 14 requirements.

Subject item*	Applicable regulations	Rationale
	Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)	NAAQS Modeling and AERA. The permit requires installation, operation, and maintenance of control equipment at the minimum overall control efficiency assumed in the dispersion model.
COMG 15 (NOx: South Building Space Heating Capacity Limits)	Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)	NAAQS Modeling and AERA. The permit limits the total heat input from space heaters as well as the months of operation to what was assumed in the dispersion model. The permit requires the facility to maintain an inventory of combustion units at the facility as well as daily records of operation.
COMG 16 (Die Casting Annual Throughput and Lead Emission Limits)	Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)	NAAQS Modeling and AERA. The permit limits the total process throughput and annual lead emissions from die casting units to what was assumed in the dispersion model. The permit requires the facility to calculate and maintain records of process throughput of lead-containing material and annual lead emissions as a 365-day rolling sum.
EQUI 82 (Battery Terminal Post Coater 6) EQUI 84 (Battery Terminal Post Coater 9) EQUI 85 (Battery Terminal Post Coater 10) EQUI 87 (Battery Terminal Post Coater 12) EQUI 88 (Battery Terminal Post Coater 15) EQUI 89 (Battery Terminal Post Coater 17) EQUI 92 (Battery Terminal Post Coater 20) EQUI 93 (Battery Terminal Post Coater 21) EQUI 94 (Battery Terminal Post Coater 22) EQUI 95 (Battery Terminal Post Coater 23) EQUI 97 (Battery Terminal Post Coater 25) EQUI 98 (Battery Terminal Post Coater 26) EQUI 99 (Battery Terminal Post Coater 27) EQUI 100 (Battery Terminal Post Coater 28) EQUI 116 (Battery Terminal Post Coater 30) EQUI 117 (South Building R&D Coater)	Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Stat. 116.07, subd. 4a(a)	Air Emissions Risk Analysis (AERA) and NAAQS Modeling. The permit requires record keeping of emissions and compliance with dispersion characteristics assumed in the dispersion modeling.
	40 CFR § 70.2	Limits to Avoid Part 70. Emissions are required to be controlled by equipment meeting minimum requirements on control efficiency and other operating requirements to limit $PM_{10}/PM_{2.5}$ potential to emit to below Part 70 thresholds.

Subject item*	Applicable regulations	Rationale
EQUI 166 (Coating Room Bulk Solvent Tank) EQUI 172 (Battery Terminal Post Coater 29) EQUI 173 (Coating Room Soaker Tank) EQUI 174 (Solvent Distillation Unit) EQUI 219 (Battery Terminal Post Coater 33) EQUI 220 (Battery Terminal Post Coater 34) EQUI 233 (Battery Terminal Post Coater 19) EQUI 240 (Prototype Coater)		
EQUI 82 (Battery Terminal Post Coater 6) EQUI 117 (South Building R&D Coater) EQUI 240 (Prototype Coater)	40 CFR § 70.2	Limits to Avoid Part 70. Requirements to keep operating records and calculations in COMG 2 to show compliance with limits on PM_{10}/$PM_{2.5}$ so the allowable emissions for the facility remain below Part 70 thresholds.
EQUI 176 (VOC Continuous Emissions Monitor)	Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7007.0800, subps. 4-6	Requirement to operate a Continuous Emission Monitor (CEM) to audit and validate records of VOC emissions.
	Minn. R. 7017.1060 to 7017.1180	Requirements for the proper operation, maintenance, and audits of the CEM.
EQUI 101 (CF Scrap Re-Melt Pot) EQUI 102 (Small Re-Melt Pot)	40 CFR § 70.2	Limits to Avoid Part 70. Process throughput limits, definition of design fuel, recordkeeping, and operation of control equipment requirements to limit PM_{10}/$PM_{2.5}$ potential to emit to below Part 70 thresholds.
EQUI 103 (Doe Run Melt Pot) EQUI 104 (CF Re-Melt Pot) EQUI 221 (Tin Melt Pot)	Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)	Air Emissions Risk Analysis (AERA) and NAAQS Modeling. The AERA and NAAQS model establishes permit limits on process throughput such that ambient concentrations of PM_{10}, $PM_{2.5}$, and lead remain below applicable health benchmarks and NAAQS. Requirements include emissions vented to stacks as a total enclosure and the use of control equipment, minimum total control efficiency, venting to specific stacks to maintain dispersion characteristics, lead-containing material process throughput recordkeeping and emissions calculations.
EQUI 113: Tool room 1 Abrasive Blasting EQUI 114: Tool room 2	40 CFR § 70.2	Limits to Avoid Part 70. Process permitted to operate at design capacity with operation of control equipment requirements to limit PM_{10}/$PM_{2.5}$ potential to emit to below Part 70 thresholds.

Commented [A15]: Delete the CEMS requirement. CEMS for STRU73 is not necessary nor useful. See comment letter for further information.

Subject item*	Applicable regulations	Rationale
Abrasive Blasting EQUI 115: DC Abrasive Blasting	Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)	Air Emissions Risk Analysis (AERA) and NAAQS Modeling. The AERA and NAAQS model establishes permit limits on emission rates at design capacity such that ambient concentrations of PM_{10}, $PM_{2.5}$, and lead remain below applicable health benchmarks and NAAQS. Requirements include emissions vented to stacks as a total enclosure and the use of control equipment, minimum total control efficiency, venting to specific stacks to maintain dispersion characteristics, and stack testing of PM_{10} and $PM_{2.5}$ to verify controlled emission rates.
EQUI 121 (Die Cast DC09) EQUI 122 (Die Cast DC12) EQUI 123 (Die Cast DC33) EQUI 124 (Die Cast DC14) EQUI 125 (Die Cast DC15) EQUI 126 (Die Cast DC21) EQUI 127 (Die Cast DC08) EQUI 128 (Die Cast DC10) EQUI 129 (Die Cast DC17) EQUI 130 (Die Cast DC18) EQUI 131 (Die Cast DC36) EQUI 132 (Die Cast DC37) EQUI 133 (Die Cast DC25) EQUI 134 (Die Cast DC22) EQUI 135 (Die Cast DC35) EQUI 136 (Die Cast DC32) EQUI 137 (Die Cast DC26) EQUI 138 (Die Cast DC27) EQUI 139 (Die Cast DC16) EQUI 140 (Die Cast DC28) EQUI 141 (Die Cast DC29) EQUI 142 (Die Cast DC19) EQUI 143 (Die Cast DC34) EQUI 146 (Die Cast DC42) EQUI 147 (Die Cast DC38) EQUI 149 (Die Cast DC40) EQUI 150 (Die Cast DC48) EQUI 152 (Die Cast DC41) EQUI 153 (Die Cast DC44) EQUI 154 (Die Cast DC45) EQUI 155 (Die Cast DC52) EQUI 156 (Die Cast DC50) EQUI 157 (Die Cast DC51)	40 CFR § 70.2	Limits to Avoid Part 70. Process throughput limits, recordkeeping, and operation of control equipment requirements to limit PM_{10}/$PM_{2.5}$ potential to emit to below Part 70 thresholds.
	Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)	Air Emissions Risk Analysis (AERA) and NAAQS Modeling. The AERA and NAAQS model establishes permit limits on process throughput such that ambient concentrations of PM_{10}, $PM_{2.5}$, and lead remain below applicable health benchmarks and NAAQS. Requirements include emissions vented to stacks as a total enclosure, use of control equipment, minimum total control efficiency, venting to specific stacks to maintain dispersion characteristics, lead-containing material process throughput recordkeeping and emissions calculations.

Subject item*	Applicable regulations	Rationale
EQUI 158 (Die Cast DC53)		
EQUI 160 (Billet Saw)	40 CFR § 70.2	Limits to Avoid Part 70. Process throughput limits and recordkeeping requirements to limit PM_{10}/$PM_{2.5}$ potential to emit to below Part 70 thresholds.
	Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)	Air Emissions Risk Analysis (AERA) and NAAQS Modeling. The AERA and NAAQS model establishes permit limits on process throughput such that ambient concentrations of PM_{10}, $PM_{2.5}$, and lead remain below applicable health benchmarks and NAAQS. Requirements include emissions vented to stacks as a total enclosure, venting to specific stacks to maintain dispersion characteristics, lead-containing material process throughput recordkeeping and emissions calculations.
STRU 1 (Smog Hog #15 Stack) STRU 15 (Smog Hog #1 Stack) STRU 16 (Smog Hog #2 Stack) STRU 17 (Smog Hog #3 Stack) STRU 20 (Smog Hog #6 Stack) STRU 23 (Smog Hog #9 Stack) STRU 24 (Smog Hog #10 Stack) STRU 25 (Smog Hog #11 Stack) STRU 26 (Smog Hog #12 Stack) STRU 30 (Smog Hog #16 Stack) STRU 31 (Smog Hog #17 Stack) STRU 32 (Smog Hog #18 Stack) STRU 33 (Smog Hog #19 Stack) STRU 34 (Smog Hog #20 Stack) STRU 35 (Smog Hog #21 Stack) STRU 43 (North Building Vent 7) STRU 44 (North Building	Limits to Avoid Part 70	Process throughput limits and recordkeeping requirements to limit PM_{10}/$PM_{2.5}$ potential to emit to below Part 70 thresholds.

Subject item*	Applicable regulations	Rationale
Vent 1) STRU 45 (North Building Vent 2) STRU 46 (North Building Vent 3) STRU 47 (North Building Vent 4) STRU 48 (North Building Vent 5) STRU 49 (North Building Vent 6) STRU 50 (North Building Vent 8) STRU 51 (North Building Vent 9) STRU 52 (North Building Vent 10) STRU 53 (North Building Vent 11) STRU 56 (North Building Vent 14) STRU 57 (North Building Vent 20) STRU 74: Smog Hog #5 Stack STRU 75: Smog Hog #8 Stack	Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)	NAAQS Modeling and AERA. Limits for PM_{10}, $PM_{2.5}$, and lead set at each STRU. Permit limit was derived from computer dispersion modeling to comply with applicable NAAQS and lead health benchmarks, including daily compliance calculations and recordkeeping, unless emissions were calculated at design capacity. Prohibited Emissions. Releasing emissions of pollutants from sources other than what was specified in the dispersion model is prohibited unless authorized under a major amendment.
STRU 1 (Smog Hog #15 Stack) STRU 15 (Smog Hog #1 Stack) STRU 16 (Smog Hog #2 Stack) STRU 17 (Smog Hog #3 Stack) STRU 20 (Smog Hog #6 Stack) STRU 23 (Smog Hog #9 Stack) STRU 24 (Smog Hog #10 Stack) STRU 25 (Smog Hog #11 Stack) STRU 26 (Smog Hog #12 Stack)	40 CFR 70.2 & Minn. R. 7007.0200, Minn. R. 7017.2020, subp. 1	Stack testing to verify compliance with emission limits for PM_{10} and $PM_{2.5}$.
	Minn. R. 7017.2020, subp. 1 Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)	Stack testing to verify compliance with emission limits for lead.

Commented [A16]: Stack testing on each individual unit is burdensome and unnecessary. Processes and controls are similar enough that a representative subset is sufficient.

Subject item*	Applicable regulations	Rationale
STRU 30 (Smog Hog #16 Stack) STRU 31 (Smog Hog #17 Stack) STRU 32 (Smog Hog #18 Stack) STRU 33 (Smog Hog #19 Stack) STRU 34 (Smog Hog #20 Stack) STRU 57 (North Building Vent 20) STRU 73 (Battery Terminal Post Coater Stack) STRU 74 (Smog Hog #5 Stack) STRU 75 (Smog Hog #8 Stack)		
TREA 1 (Smog Hog #15) TREA 25 (Smog Hog #1) TREA 26 (Smog Hog #2) TREA 27 (Smog Hog #3) TREA 30 (Smog Hog #6) TREA 33 (Smog Hog #9) TREA 34 (Smog Hog #10) TREA 35 (Smog Hog #11) TREA 36 (Smog Hog #12) TREA 39 (Smog Hog #16) TREA 40 (Smog Hog #17) TREA 41 (Smog Hog #18) TREA 42 (Smog Hog #19) TREA 43 (Smog Hog #20) TREA 52 (HEPA Filter – Tool Room 1 Abrasive Blasting) TREA 53 (HEPA Filter – Tool Room 2 Abrasive Blasting) TREA 54 (HEPA Filter – DC Abrasive Blasting) TREA 55 (HEPA Filter – EQUI 84) TREA 56 (HEPA Filter – EQUI 88) TREA 57 (HEPA Filter –	40 CFR § 70.2	Limits to Avoid Part 70. Control efficiency and other operating requirements to limit $PM_{10}/PM_{2.5}$ potential to emit to below Part 70 thresholds. Limits reflect that the units have total enclosures and operate at the limited throughputs or defined throughputs. Permit specifies that replacement equipment must meet the requirements under the TREA being replaced.

Subject item*	Applicable regulations	Rationale
EQUI 95) TREA 58 (HEPA Filter – EQUI 219) TREA 59 (HEPA Filter – EQUI 220) TREA 78 (Smog Hog #5) TREA 79 (Smog Hog #8)	Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)	NAAQS Modeling. The permit requires installation, operation, and maintenance of control equipment at the minimum overall control efficiency assumed in the dispersion model.
TREA 60 (Nederman Filter 15N - STRU 1) TREA 61 (Nederman Filter 1N - STRU 15) TREA 62 (Nederman Filter 2N1 - STRU 16) TREA 63 (Nederman Filter 2N2 - STRU 16) TREA 64 (Nederman Filter 3N - STRU 17) TREA 65 (Nederman Filter 4N - STRU 74) TREA 66 (Nederman Filter 6N - STRU 20) TREA 67 (Nederman Filter 7N - STRU 75) TREA 68 (Nederman Filter 9N - STRU 23) TREA 69 (Nederman Filter 10N - STRU 24)	40 CFR § 70.2	Limits to Avoid Part 70. Control efficiency and other operating requirements to limit $PM_{10}/PM_{2.5}$ potential to emit to below Part 70 thresholds. Limits reflect that the units have total enclosures. Permit specifies that replacement equipment must meet the requirements under the TREA being replaced.
TREA 70 (Nederman Filter 11N - STRU25) TREA 71 (Nederman Filter 12N1 - STRU26) TREA 72 (Nederman Filter 12N2 - STRU26) TREA 73 (Nederman Filter 16N - STRU30) TREA 74 (Nederman Filter 17N - STRU31) TREA 75 (Nederman Filter 18N - STRU32) TREA 76 (Nederman Filter 19N - STRU33) TREA 77 (Nederman Filter 20N - STRU34)	Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)	NAAQS Modeling. The permit requires installation, operation, and maintenance of control equipment at the minimum overall control efficiency assumed in the dispersion model.

3. Technical information

3.1 Calculations of potential to emit

- **Battery terminal post coaters**

  Unrestricted potential to emit

  Emissions from battery terminal post coaters (coaters) are mainly VOCs but also include PM/ PM_{10}/ $PM_{2.5}$from coaters that use spray applications. The specific VOC being regulated as an air toxic is t-DCE, and it is conservatively assumed that all VOC in t-DCE VOC coatings is t-DCE. The reason for this conservative assumption is because the exact content of t-DCE in the VOC coatings was certified as not public data by MPCA on January 25, 2019. In order to show compliance with permit limits, the data to be used must be public as it is considered emission's data as defined at in 40 CFR 2.301(a)(2)(i). Therefore, the only data that can be used for determining compliance with t-DCE limitations is the VOC content of coating material which has been disclosed as public data. The VOC content is a conservative estimate of t-DCE because there are other VOCs in the VOC coating formulations. Unrestricted VOC emissions were calculated through a mass balance approach using the maximum coating capacity of the coater and the maximum VOC content (weight fraction) of each coating specified by their respective safety data sheet (SDS), laboratory analysis (water-based coating), or ASTM testing method (UV coating). VOC content below detection level was conservatively assumed to be present at minimum detection levels (MDL). Therefore, maximum potential to emit for VOCs was calculated, in pounds per hour (lb/hr) and tons per year (ton/yr), as follows:

  Maximum Hourly VOC Emissions (lb/hr) = [Maximum Coating Application Rate (lb/hr)] x [Maximum VOC Content of Coating (wt. %)]

  Maximum Annual Emissions of VOC (ton/yr) = [Maximum Hourly Emissions (lb/hr)] x [24 hour/day] x [365 day/year] / [2000 lb/ton]

  Similarly, the potential to emit for PM/PM_{10}/$PM_{2.5}$from coaters using a spray application is also calculated though a mass balance approach using the coater's maximum coating application rate, the maximum solids content of any coating used at the facility, and, for t-DCE VOC and water-based coatings, the minimum transfer efficiency of the spray gun. The minimum spray gun transfer efficiency for t-DCE VOC and water-based coatings was reported as 65 percent, consistent with EPA guidance for a low volume, low pressure (LVLP) spray guns. Since no specific transfer efficiency was available for the UV coating spray nozzles, the facility was required to conduct a performance test to determine PM/PM_{10}/$PM_{2.5}$emission factors under Permit No. 12300341-004. Therefore, maximum potential to emit for PM/PM_{10}/$PM_{2.5}$from spray t-DCE VOC and water-based coaters are calculated as follows:

  Maximum Hourly Emissions of PM/PM_{10}/$PM_{2.5}$ (lb/hr) = [Maximum Coating Application Rate (lb/hr)] x [Maximum Solids Content in Coating (wt. %)] x [1- Transfer efficiency (fraction)]

  Maximum Annual Emissions of PM/PM_{10}/$PM_{2.5}$ (tpy) = [Maximum Hourly Emissions (lb/hr)] x [24 hour/day] x [365 day/year] / [2000 lb/ton]

  The emission factors resulting from the UV coater performance test performed on June 22, 2021, were determined and will be used in emissions calculations until the next performance test as follows*:*

  Maximum Hourly Emissions of PM/ PM_{10}*/$PM_{2.5}$ (lb/hr) = [Maximum Coating Application Rate (lb/hr)] x [PM/PM_{10}/$PM_{2.5}$Emission Factor (lb/lb)]*

Maximum Annual Emissions of PM/PM_{10}/$PM_{2.5}$ (tpy) = [Maximum Hourly Emissions (lb/hr)] x [24 hour/day] x [365 day/year] / [2000 lb/ton]

Using the solid content in each coating, it was assumed that PM_{10} and $PM_{2.5}$emissions are each equal to PM emissions. Although this approach is conservative for filterable PM/PM_{10}/$PM_{2.5}$and does not account for possible formation of condensable PM aerosols, compliance determinations will require assessment of condensable particulates to ensure compliance. The maximum coater capacity, VOC solvent, water-based coating VOC content, UV coating VOC content, coating solids content, UV coating emission factors at the time of permit issuance, and minimum spray gun transfer efficiency allowed by the permit are listed in Appendix B to the permit.

Commented [A17]: There is no explanation for how this compliance demonstration would be completed. Water Gremlin reserves further comment.

Limited potential to emit

Unlike unrestricted PTE, limited PTE calculations take into account federally-enforceable limits or operation restrictions. Therefore, limited emissions may be calculated by taking into account permit limits, including but not limited to emission limits, coating usage limits, VOC and solids content limits, limits on hours of operation, minimum transfer efficiencies, and capture and control efficiencies on pollution control equipment. For emissions from battery terminal post coaters, the permit has federally-enforceable limits on VOC and PM/PM_{10}/$PM_{2.5}$emissions that may not be exceeded and also includes compliance demonstration conditions (Section 3.3). The permit has state-only enforceable limits on t-DCE emissions that may not be exceeded and also includes compliance demonstration conditions (Section 3.3). Therefore, the facility's limited PTE for these pollutants is equal to the permit limit.

- **t-DCE emissions outside coating rooms**

Emissions of t-DCE inside the facility building but outside of coating rooms, including the chemical storage room, were calculated using measured indoor air concentrations of the pollutant. This separate accounting was included because the t-DCE solvent usage requirements measure what is used in the VOC coating room and there are minor but measurable sources of t-DCE solvent evaporation outside coating rooms. Due to the large amount of data available, a 95 percent upper confidence limit (UCL)was calculated using one full year of indoor air sampling data. The upper bound of the 95 percent UCL was used to represent the highest indoor t-DCE concentration at any given time. For non-coating rooms other than the chemical storage room, the total daily contribution was determined to be insignificant when compared to the facility's permit limit. Indoor air t-DCE concentrations in the chemical storage room were deemed significant enough to be required to be included in daily t-DCE calculations. The daily t-DCE emissions from the chemical storage room are calculated as follows:

Commented [A18]: Therefore, the non-coating room value in Appendix B should be deleted.

t-DCE Emissions Outside Coating Rooms (ton/day) = [Measured t-DCE concentration (ug/m3)] x [Chemical storage room ventilation rate (ft3/min)] / [35.31 ft3/m3] x [60 min/hr] x [g/1,000,000 ug] / [453.6 g/lb] x [2000 lb/ton] x [60 min/hr] x [24 hr/day]

- **Lead processing units**

Unrestricted potential to emit

Emissions from lead melt pots, die casting units, and billet saws include lead, PM, PM_{10}, and $PM_{2.5}$ (PM_{10} and $PM_{2.5}$emissions were conservatively assumed to be equal to each other). Emissions are calculated through a mass balance approach using the maximum hourly lead-containing material throughput and the uncontrolled emission factor described later in this section. Therefore, maximum unrestricted PTE for lead, PM, PM_{10}, and $PM_{2.5}$is calculated as follows:

Maximum Uncontrolled Hourly Emissions of Lead (lb/hr) = [Maximum Hourly Process Throughput (lb/hr)] x [Uncontrolled Emission Factor (lb lead/lb lead-containing material)]

Maximum Uncontrolled Annual Emissions of Lead (ton/year) = [Maximum Uncontrolled Hourly Emissions of Lead (lb/hr)] x [24 hour/day] x [365 day/year] / [2000 lb/ton]

Maximum Uncontrolled Hourly Emissions of PM (lb/hr) = [Maximum Hourly Process Throughput (lb/hr)] x [Uncontrolled Emission Factor (lb PM/lb lead-containing material)]

Maximum Uncontrolled Annual Emissions of PM (ton/year) = [Maximum Uncontrolled Hourly Emissions of PM (lb/hr)] x [24 hour/day] x [365 day/year] / [2000 lb/ton]

Maximum Uncontrolled Hourly Emissions of PM_{10} (lb/hr) = [Maximum Hourly Process Throughput (lb/hr)] x [Uncontrolled Emission Factor (lb PM_{10}/lb Lead-containing material)]

Maximum Uncontrolled Annual Emissions of PM_{10} (ton/year) = [Maximum Uncontrolled Hourly Emissions of PM_{10} (lb/hr)] x [24 hour/day] x [365 day/year] / [2000 lb/ton]

Maximum Uncontrolled Hourly Emissions of $PM_{2.5}$(lb/hr) = [Maximum Hourly Process Throughput (lb/hr)] x [Uncontrolled Emission Factor (lb $PM_{2.5}$/lb Lead-containing material)]

Maximum Uncontrolled Annual Emissions of $PM_{2.5}$ (ton/year) = [Maximum Uncontrolled Hourly Emissions of $PM_{2.5}$(lb/hr)] x [24 hour/day] x [365 day/year] / [2000 lb/ton]

Unrestricted PTE is required to be calculated in order to determine program applicability, such as PSD and Part 70, and if additional limits are required to remain below these programs and other standards (i.e., Industrial Process Equipment Rule). Since none of the casting units had a material throughput certified by the manufacturer, the facility was asked to estimate each casting unit's maximum short-term throughput. This was done by weighing each unit of lead-containing material loaded into the casting unit ("shot") and estimating the number of "shots" per eight-hour shift for that casting unit to obtain the maximum short-term throughput, in tons per hour, for each casting unit. The resulting throughputs were used in the equations above to obtain unrestricted potential to emit for each casting unit and billet saw. Spreadsheets in Attachment 1 to this TSD contains detailed calculations showing how short-term throughputs were derived.

Limited potential to emit

Unlike unrestricted PTE, limited PTE calculations take into account federally enforceable emission limits or operation restrictions. Therefore, limited emissions may be calculated by taking into account permit limits, including but not limited to emission limits, material throughput limits, limits on hours of operation, approved emission factors and/or minimum control efficiencies on pollution control equipment. For lead and PM/PM_{10}/$PM_{2.5}$emissions from lead processing units, the permit has federally-enforceable limits on lead and PM/PM_{10}/$PM_{2.5}$emissions, including compliance demonstrations (Section 3.3), that may not be exceeded; therefore, the facility's limited PTE from these units are equal to their respective permit limits.

Uncontrolled emission factors

Uncontrolled emission factors for PM, PM_{10}, and $PM_{2.5}$were derived from a June 2021 performance test of a Nederman filter and Smog Hog control equipment train. Recurring performance testing on an annual basis of select control equipment trains are required by the permit to verify emission factors, overall control efficiency, and compliance with stack emission limits (Section 3.4)

Commented [A19]: Annual performance testing is excessive and unnecessary. Inspections are required under the permit. Water Gremlin otherwise recommends following the manufacturer's recommendations.

Controlled emission factors

Controlled emission factors for captured lead emissions were derived from a stack test conducted in November 2018. The stack test measured emission rates from one of each Smog Hog configuration,

including single pass and double pass. Some emission factors are being extrapolated to representative emission units and associated control equipment as not all emission units or control equipment were tested. Since outlet emission rates were measured as pure lead, controlled emission factors for lead were obtained by first converting the lead-containing material throughput to pure lead throughput as follows:

Lead Throughput (lb/hr) = [Hourly Lead-Containing Material Throughput during Test (lb/hr)] x [Lead Content of Lead-Containing Material (lb lead/lb lead-containing material)]

The average hourly lead-containing material throughput was obtained by averaging the total lead-containing material throughput for the three test runs conducted. The maximum lead content of the lead-containing material was calculated as follows:

Lead Content of Lead-Containing Material (%) = [100%] – [Total Non-Lead Metal Content (%)]

The total non-lead content was obtained from the material specification sheet required by the facility. From this, the calculated lead content for each lead-containing material used at the facility ranged from 95 to 99.98 percent. With the lead content known, the controlled emission factor for lead may be calculated as follows:

Controlled Emission Factor for Lead (lb lead/lb lead-containing material) = [Average Hourly Lead Emissions at Test Outlet (lb lead/hr)] / [Lead-Containing Material Throughput (lb lead-containing material/hr)]

A maximum lead content of lead-containing material of 95 percent was used and is the maximum allowable in lead emissions calculations. As shown in the equations above, a lower lead content produces a lower lead-containing material throughput and, therefore, a higher controlled emission factor for lead. The higher controlled emission factor will produce higher calculated lead emissions for any given lead-containing material throughput, thus providing a more conservative estimation of emissions.

Uncaptured and captured emissions

During the die casting process, emissions escape the equipment casing before being vented to control equipment (uncaptured emissions). Therefore, the relative amount of emissions escaping in this manner had to be estimated. Compilation of Air Pollutant Emission Factors (AP-42), Chapter 12.11 Secondary Lead Processing describes this phenomenon and estimates that five percent of total uncontrolled emissions escape capture. Therefore, for modeling purposes, uncaptured PM/PM_{10}/$PM_{2.5}$and lead was estimated using known throughputs and emission factors from performance testing. Since these emissions are not captured by control equipment, it was assumed that all uncaptured emissions were emitted from the nearest building vent. The permit specifies to which vent uncaptured emissions from each unit must be vented. The permit also specifies that all other emissions (captured) must vent to control equipment whenever in operation. For other lead emission units, such as melt pots, the permit requires a total enclosure in which all emissions must vent. Therefore, no uncaptured emissions needed to be estimated.

- **Abrasive blasting**

  Unrestricted potential to emit

  Unrestricted particulate emissions from abrasive blasting operations were calculated using maximum flow rates, material densities, and emission factors from STAPPA/ALAPCO Abrasive Blasting guidance (5/91). The emissions calculations assumed each manual abrasive blasting unit utilizes one spray gun with a 0.25-inch diameter tip size at a maximum pressure of 90 pounds per square inch (psi) using glass

beads as abrasive media. From the spray gun tip diameter and pressure, the sand flow rate was determined from the chart provided in the STAPPA/ALAPCO Abrasive Blasting Guidance. Due to the density difference between sand and glass beads, the flow rate of sand obtained from the chart had to be corrected for the flow rate of glass bead media, as follows:

Flow Rate of Glass Beads (lb glass/hr) = [Flow Rate of Sand (lb sand/hr)] x [(Density of Glass Beads (lb glass/ft3)) / (Density of Sand (lb sand/ft3))]

After finding the true flow rate of the abrasive (glass beads), the unrestricted hourly and annual emissions from abrasive blasting units may be calculated as follows:

Unrestricted Hourly Emissions of PM/PM_{10}/$PM_{2.5}$(lb/hr) = [Maximum Abrasive Flow Rate (lb abrasive/hr)] x [Emission Factor (lb pollutant/lb abrasive)]

Unrestricted Annual Emissions of PM/PM_{10}/$PM_{2.5}$ (ton/yr) = [Unrestricted Hourly Emissions of PM/PM_{10}/$PM_{2.5}$ *(lb/hr)] x [8760 hr/yr] / [2000 lb/ton]*

It was assumed that PM_{10} and $PM_{2.5}$emissions are each equal to PM emissions to obtain a conservative result.

Limited potential to emit

Limited hourly and annual emissions from abrasive blasting are calculated using control efficiencies provided by HEPA filtration (Section 3.2) and is obtained as follows:

Maximum Controlled Hourly Emissions of PM/PM_{10}/$PM_{2.5}$ (lb/hr) = [Maximum Abrasive Flow Rate (lb abrasive/hr)] x [1 – Control Efficiency (fraction)]

Maximum Controlled Annual Emissions of PM/PM_{10}/$PM_{2.5}$ (ton/yr) = [Maximum Controlled Hourly Emissions of PM/PM_{10}/$PM_{2.5}$ (lb/hr)] x [8760 hr/yr] / [2000 lb/ton]

Lead emissions

Abrasive blasting is primarily used to remove metal residues from die casting tools, specifically lead residue. As a result, in addition to calculating PM/PM_{10}/$PM_{2.5}$emissions from these units, lead emissions were also estimated using the same calculation methods given above. A lead emission factor, in pounds of lead emitted per pound of abrasive blasted, was derived from the Background Document in AP-42 Chapter 13.2.6, Tables 4 and 5, conservatively assuming that the lead covers 100 percent of the tool surface and that the composition of the residue is 100 percent lead.

Compliance demonstration

Controlled emissions from abrasive blasting EQUI 113 and 114 vent to a common stack STRU 57. EQUI 113 and 114 were modeled assuming controlled emission rates. There are no daily calculations of emissions because these were modeled at rated capacity but there are requirements to test emissions at STRU 57 to verify compliance with emission limits.

The DC abrasive blasting EQUI 115 shares stacks (STRU 43 and STRU 50) that have an enforceable emission limit with associated compliance demonstration by means of daily emission calculations at STRU 43 and 50. EQUI 115 was modeled at rated capacity for all pollutants.

Uncaptured emissions from EQUI 124 (die casting unit), which shares STRU 43 with EQUI 115 emissions and two makeup air units (EQUI 106 and EQUI 109), is required to show compliance with applicable emission limits by means of daily calculations because it was not modeled at design capacity. The

contribution from EQUIs 106, 109, and 115 unrestricted potentials to emit were added to the calculation to demonstrate compliance with from the modeled emission rate for $PM_{10}$and $PM_{2.5}$. Only the contribution from EQUIs 115 unrestricted potential to emit was added to the calculation to demonstrate compliance with from the modeled emission rate for lead NAAQS at STRU 43 because the lead emissions from EQUIs 106 and 109 are orders of magnitude lower. The die cast units are subject to a facility-wide limit on a 365-rolling sum basis. Since EQUI 115 was modeled at rated capacity, the 365-day rolling sum of lead emissions at STRU 43 were not included as this will count towards the facility-wide cap on annual lead emissions from die cast.

Likewise, uncaptured emissions from EQUI 125 and EQUI 126 (die casting units), which shares STRU 50 with EQUI 115, one makeup air unit (EQUI 109) and a water-based dip/drip coater (EQUI 116), is required to show compliance with applicable PM_{10} and $PM_{2.5}$emission limits by means of daily calculations because EQUI 125 and EQUI 126 were not modeled at design capacity. The contribution from EQUIs 109 and 115 unrestricted potential to emit were added to the calculation to demonstrate compliance with from the modeled emission rate for $PM_{10}$and $PM_{2.5}$at STRU 50. Only the contribution from EQUIs 115 unrestricted potential to emit was added to the calculation to demonstrate compliance with from the modeled emission rate for lead NAAQS at STRU 50 because the lead emissions from EQUIs 109 are orders of magnitude lower. Since EQUI 115 was modeled at rated capacity, the 365-day rolling sum of lead emissions at STRU 50 were not included as this will count towards the facility-wide cap on annual lead emissions from die cast. Additionally, the permit does not have flexibility provisions for the abrasive blasting.

Performance testing to demonstrate compliance with PM_{10}/$PM_{2.5}$and lead is required at STRU 57 (venting controlled emissions from abrasive blasting EQUI 113 and 114) to verify controlled emission rates for the abrasive blasting units that were used for modeling. This is because the claimed controlled efficiencies from TREA 52 (HEPA Filter) are relatively high. This will also serve to verify emission calculations for EQUI 115 as the same calculation method was used.

- **Combustion**
  The facility has several combustion units, including melting pot heaters, a natural gas bake oven, makeup air units (MAUs), roof top units (RTUs), and space heaters, many of which have potential emissions below the thresholds listed at under Minn. R. 7007.1300, subp. 3(F). Since the permit requires limits on nitrogen oxide (NOx) emissions to meet applicable NAAQS, these units are no longer insignificant activities and have been added to the subject item inventory. Uncontrolled PTE of criteria pollutants, HAPs, and greenhouse gas (GHG) emissions from natural gas-fired melting pot heaters, a natural gas bake oven, MAUs, RTUs and space heaters were calculated using emission factors from AP-42, Chapter 1.4, Table 1.4-2, 1.4-3, and 1.4-4. Emission factors for GHG emissions were obtained from 40 CFR pt. 98. Uncontrolled combustion emissions from the emergency generator were calculated using emission factors from AP-42, Chapter 3.3, Table 3.3-1 (criteria pollutants), Table 3.3-2 (HAPs) and 40 CFR pt. 98 (GHG).

  Calculation of lead emissions at stacks where MAUs share with die cast and abrasive blast units were not included as the lead emissions from MAUs are very small compared to lead processing units.

- **Fugitive emissions**
  40 CFR § 52.21(b)(20) defines fugitive emissions as emissions "… which could not reasonably pass through a stack, chimney, or other functionally-equivalent opening." Sources of fugitive PM/PM_{10}/$PM_{2.5}$ emissions from the facility were defined for paved road traffic and cooling towers and included in dispersion modeling to determine facility impacts on ambient PM_{10} and $PM_{2.5}$concentrations. $PM_{10}$and $PM_{2.5}$were conservatively assumed to be equal to PM emissions.

Paved roads

Paved road emissions were calculated using equations from AP-42 Chapter 13, Section 13.2.1 (01/11). The silt loading value obtained for corn wet mills (Table 13.2.1-3) was assumed to be representative of paved roads at Water Gremlin because no material handling occurs outdoors, and outdoor material storage piles are not maintained at either facility. Paved roads used for employee parking were not evaluated per MPCA guidance.

Cooling towers

The cooling towers at the facility are used to dissipate large heat loads to the atmosphere. Because wet cooling towers provide direct contact between the cooling water and the air passing through the tower, some of the liquid water may be entrained in the air stream and be carried out of the tower as "drift" droplets. Therefore, the particulate matter constituent of the drift droplets derived from total dissolved solids (TDS) in the cooling water may be classified as an emission. Fugitive PTE from both cooling towers was calculated using AP-42 Chapter 13, Section 13.4 (Rev 01/95) using procedures described for source-specific TDS content.

- **Remediation stack**

  Controlled Emissions

  The MPCA's Remediation Division requires that emissions from the remediation stack are controlled by two 2,000-pound granulated activated carbon (GAC) canisters connected in-series (TREA 50 and TREA 51) as described in Section 3.2.3 below. The remediation stack vents emissions from the required operation of the Sub-Slab Depressurization and Solvent Vapor Extraction system. The permit requires sampling of the remediation system stack (STRU 41) in accordance with the requirements of the MPCA Remediation Division to determine emission rates. When required, emissions must be reported. t-DCE emissions are calculated as follows:

  t-DCE Emissions (pounds/day) = [Measured t-DCE Remediation Stack Concentration (ug/L)] x [Remediation Stack Ventilation Rate (ft3/min)] x [28.32 L/ft3] x [60 min/hr] / [1,000,000 ug/g] / [453.6 g/lb] x [24 hr/day]

  Uncontrolled Emissions

  The permit application includes modeling of uncontrolled emissions from the remediation stack in the event the MPCA's Remediation Division determines operation of the GAC canisters is no longer required. The uncontrolled emissions were determined by calculating emission rates based on SSDS/SVE influent (prior to control) data obtained on January 28, 2022 and using the highest influent concentration. The AERA analysis includes the analysis of uncontrolled emissions from the remediation stack, so even if this operation scenario were to occur, the risks from this to human health were determined to be within acceptable ranges. The modeled uncontrolled emission rates for t-DCE and TCE are included in the permit as an emission limitation to provide the public assurances that even very small sources of t-DCE and TCE from the mitigation system were included in the assessment of health impacts. The uncontrolled t-DCE emissions from the remediation stack are several orders of magnitude smaller than the emission limit from coating operations and therefore are not included in the calculation to demonstrate compliance with this limit. In addition, the emissions from the mitigation stack are not expected to increase due to the permit conditions on coating operations, material handling of VOC and the solvent vapor mitigation system.

- **Tin processing units**

  The facility also manufactures tin sinkers as part of their lead-free fishing tackle line. The facility has one electric melt pot dedicated to tin only where hot metal is either die casted or extruded into wire and cut with the billet saw (also used for lead sinker production). Particulate emissions from tin processing were calculated using the same emission factors that were used for the lead melt pots and billet saw (Section

Commented [A20]: This should be removed. Uncontrolled emissions were evaluated. The air permit does not need to include conditions for the control of the mitigation system. Including these requirements once in the permit and requiring a lengthy and expensive amendment to remove them is unnecessarily burdensome.

3.1.2). Other activities, including cold forming (coining), hot/cold extrusion, and packaging processes qualify as insignificant activities not required to be listed under Minn. R. 7007.1300, subp. 2.C(2).

- **Insignificant activities required to be listed**
  Certain activities were verified to be below insignificant thresholds described in Minn. R. 7007.1300, subp. 3(F). VOC emissions from parts washing were calculated using mass balance from maximum materials content and maximum throughout, assuming 100 percent of VOCs used are emitted. Other insignificant activities conducted at the facility include intermittent welding and brazing activities for which emissions estimation and testing is not feasible.

Attachment 1 to this TSD contains a summary of the PTE of the Facility, including detailed spreadsheets and supporting information prepared by the MPCA and the Permittee.

3.2 Pollution control equipment

The facility was required to install, operate, and maintain pollution control equipment at the minimum overall control efficiency assumed in the model. This section describes the pollution control equipment installed, pollutant capture efficiency, and maintenance actions required by the permit.

- **Lead processing units**
  Melting pots release emissions of lead and PM due to the heating of lead ingots and handling of molten lead. Die casting units use mineral oil as a lubricant on die tool surfaces to promote smooth release of parts from casting tools. As a result, the mineral oil is atomized and released into the air due to pressure release from die tools, resulting in PM and lead emissions. To control these captured emissions, the facility has added Nederman mist eliminators with HEPA filtration to the majority of lead melt pots and die casting units at the facility. The mist collector plates trap atomized mineral oil in the exhaust gas using the inertia present in the oil droplets. Particles not trapped by collector plates are then captured by the HEPA filter.

  To achieve additional control of captured PM/PM_{10}/$PM_{2.5}$, the die casting units and lead melt pots will each continue to vent to low-efficiency electrostatic precipitator (ESP), also known as a Smog Hog, connected in-series with a Nederman filter. Single pass Smog Hogs are configured such that particles in exhaust gas become charged and then pass over oppositely-charged collector plates. The charged particles then attach to the oppositely-charged collector plates, and the cleaned air exits the unit. Double-pass Smog Hogs act the same as single-pass but the pollutant-laden gas passes over two sets of collector plates (longer collection path) with double the power, thus achieving greater pollution control. With the addition of the Nederman filters, the overall pollution control efficiency for lead processing units was assumed to be greater than or equal to 86.6 percent. Therefore, the permit will require a minimum of 86.6 percent control efficiency for PM/PM_{10}/$PM_{2.5}$for units controlled by combination mist eliminators with HEPA filtration. The Permittee is required to operate and maintain Nederman filters at all times whenever lead processing units are in operation, including performance testing (Section 3.4), periodic inspections, cleaning, filter replacement, and recordkeeping.

- **Spray coaters**
  The Permittee is required to operate individual HEPA filters on most spray coaters. The uncontrolled emissions from most spray coaters are captured and controlled with HEPA filters before emissions are released from coating rooms through the common stack (STRU 73). Based on manufacturer's specifications, the facility assumed 99 percent control efficiency of PM/PM_{10}/$PM_{2.5}$emissions from controlled spray coating operations. This level of control efficiency is needed in order to comply with applicable NAAQS. The permit enforces the minimum control efficiency of the HEPA filter and requires that it be in operation at all times, including performance testing (Section 3.4), periodic inspections, cleaning, filter replacement, and recordkeeping. Certain UV coaters, which use spray application, are not

required to operate with HEPA filters. These units were modeled for compliance with $PM_{10}$and $PM_{2.5}$ NAAQS while using uncontrolled emission rates.

- **Solvent vapor remediation system**
  A permanent sub-slab depressurization and solvent vapor extraction system with two 2,000-pound GAC canisters connected in-series has been installed at the facility to extract and capture solvent vapors from the vapor space below the North Building floor. The plumbing, blower fan, and carbon canisters collectively make up the solvent vapor remediation system (COMG 9). Vapor phase carbon design loading modeling performed by the manufacturer, H2K Technologies, utilized the average of the ten highest sub-slab vapor concentrations for TCE and t-DCE treated by 2,000 pounds of GAC. The modeling data shows TCE breakthrough of the lead (first) canister at 300 days, and no t-DCE breakthrough of the lead (second) canister prior to 300 days. Therefore, there is reasonable assurance the carbon filtration system demonstrates 100 percent control of TCE and t-DCE emissions over 300 days of continuous operation.

  Sampling and analysis of influent between TREA 50 and TREA 51 conducted through September 2019 showed reduction higher than 95 percent for TCE, t-DCE and other chlorinated organic compounds of interest. This is indicative that uncontrolled emissions have achieved asymptotic levels. Sampling and analysis of uncontrolled emissions conducted in January of 2022 at the solvent vapor remediation system stack (STRU 41) confirmed very low uncontrolled emissions of t-DCE as compared to the t-DCE emission limit for COMG 1. The Permittee conducted an air toxic analysis using the uncontrolled emissions from COMG 9 and showed impacts in compliance with MPCA approved health benchmarks. Because of this, the compliance emission calculations for t-DCE will not include emissions from COMG 9.

  At the time of permit issuance, the MPCA Remediation Division requires the Permittee to operate and maintain the solvent vapor remediation system at all times, including gas sampling, periodic inspections, periodic GAC canister replacement, and recordkeeping. The permit requires the Permittee to operate the GAC canisters as described in the permit for as long as this is required by the MPCA Remediation Division.

- **Abrasive blasting**
  The facility operates abrasive blasting units at the facility that emit PM/PM_{10}/$PM_{2.5}$and lead as described in Section 3.1.4. In order to comply with the $PM_{10}$and $PM_{2.5}$NAAQS standards, the facility is capturing and controlling all emissions with a HEPA filter installed on each blasting media collection exhaust system. The HEPA filters are rated by the manufacturer to achieve 99.9 percent control efficiency of particulate emissions. The Permittee is required to operate and maintain the HEPA filtration system at all times, including during periodic inspections, replacement, and recordkeeping.

3.3 Compliance demonstrations

The facility was required to accept state and federally-enforceable emission and operation limits such that the facility remains protective of all applicable health benchmarks and NAAQS standards, including limits on emissions to avoid PSD regulations and Part 70 applicability. This section describes the actions required by the permit for the facility to demonstrate compliance with limits enforced by the permit.

- **VOC limits**
  The permit contains a federally-enforceable limit of 90 tons per year on VOC emissions applicable to coating operations such that the facility remains below PSD and Part 70 permitting thresholds. To demonstrate continuing compliance with the limit on a monthly basis based on daily operating records, the permit requires that the facility track daily usage of VOC-containing materials, including (but not limited to) VOC coating, water-based coating, UV coating, VOC solvent recovered from the distiller, VOC that exits the facility as waste, and other VOC-containing material on a daily basis.

Commented [A21]: All permit conditions related to the mitigation system are unnecessary and should be removed.

Commented [A22]: There is no justification to have the air permit duplicate requirements from the Remediation Division when the uncontrolled air emissions were shown to be insignificant.

Commented [A23]: This is vague and unworkable. Many regular household and commercial products, such as cleaning products, contain VOCs. The significant usage will be captured by the aforementioned tracking.

The permit includes Material Content requirements, which establish the maximum allowable VOC content of the VOC coatings used at the facility. While the VOC coatings contain the largest proportion of VOCs, there are small amounts of VOCs released by water-based coatings and UV coatings that must be used in VOC calculations to demonstrate compliance with the 90 ton per year limit. Using daily usage records and material VOC contents as determined by the Material Content requirement in Appendix B of the permit, the facility is required to calculate monthly VOC emissions using formulas specified in the permit and record total VOC emissions for each operating month. Finally, the permit requires the facility to calculate and record the 12-month rolling sum of VOC emissions for the previous 12-month period. Other sources of VOCs are combustion sources which amount to much less than 10 tons per year so that there is enough compliance to keep the facility under 100 tons per year of allowable VOC emissions.

- **t-DCE limits**

The permit contains a state-enforceable limit of 32.6 tons per year on t-DCE emissions such that ambient concentrations of t-DCE remain below the MDH chronic inhalation Risk Assessment Advice (RAA) health benchmark of 20 micrograms per cubic meter, as described in the AERA conducted and the discussion on the weight of evidence approached used in the technical analysis in support of this permit action (Section 3.6 and Attachment 1 and 1.a). Operating records from 2021 and 2022 and ambient air measured concentrations of t-DCE demonstrate that Water Gremlin operated at emission levels of t-DCE which are very close to the limit determined to protect human health. Given the thin margin of compliance based on actual operations in 2021 and 2022, the MPCA deemed it prudent and necessary to require daily compliance demonstrations based on a 365-day rolling sum of t-DCE emissions. Daily compliance demonstration will enable Water Gremlin to discover exceedances to the t-DCE limit and to implement corrective actions much sooner than if the compliance verification is done on a monthly basis.

Commented [A24]: See petition for contested case hearing and comment letter regarding the TDCE limits.

In order to demonstrate continuous compliance with the limit on a daily basis, the permit requires that the facility track all t-DCE-containing materials, including (but not limited to) t-DCE containing material usage, t-DCE recovered from the distiller, t-DCE that is reused, t-DCE that exits the facility as waste on a daily basis. The t-DCE usage, t-DCE recycling in the coating room, t-DCE recovered from the distillation unit and what leaves the facility is tracked by manually weighing the t-DCE-containing materials on a daily basis.

The tracking of t-DCE is done by conservatively assuming that all VOC in VOC coatings is t-DCE. The reason for this conservative assumption is because the exact content of t-DCE in the VOC coatings was certified as not public data by MPCA on January 25, 2019. In order to show compliance with permit limits, the data to be used must be public as it is considered emission's data as defined at in 40 CFR 2.301(a)(2)(i). Therefore, the only data that can be used for determining compliance with t-DCE limitations is the VOC content of coating material which has been disclosed as public data. The VOC content is a conservative estimate of t-DCE because there are other VOCs in the VOC coating formulations. As noted above, the permit includes Material Content requirements, which establish the maximum allowable content of the VOC coatings used at the facility.

The MPCA considered the requirement to use automatic meters on each coater to track t-DCE usage in the coating room, which is the highest figure in the computation of t-DCE emissions. Properly maintained and operated automatic coating meters minimizes the potential for error and increases consistency compared to manual measurements recorded by multiple workers. The MPCA discussed this option with Water Gremlin, and they explained this was not a viable option for operations at this facility. While automatic coating meters are more commonly used in automated coating operations, the t-DCE coating operations at Water Gremlin are done with a significant amount of manual labor. Another aspect of the use of solvent and coatings that makes is difficult to use automatic meters is the fact that

while the t-DCE coating material is applied and some of it (excess that drips to the bottom of the coater) is reused at the coater. Additionally, a fraction of what is used in coaters is manually recovered, weighed, and sent to the distillation unit outside the coating room for cleaning before it is returned to the coating room for reuse. The recovered solvent to be cleaned is collected and recovered in batches, which is not how automatic readers usually work. Instead, Water Gremlin proposed in the permit application a detailed protocol for daily tracking based on manual weighing that they had been using to comply with the Administrative Order, with some revisions. The proposed tracking protocol was reviewed and approved by MPCA to be used in the permit. In order to verify the reliability of the manual methods to directly measure the t-DCE usage, the permit includes the use of a Continuous Emission Monitor System (CEMS) installed at the coating room stack and also requires quarterly audits based on solvent purchase records and inventory at hand. These verification requirements are further explained at 3.3.8 below.

Commented [A25]: The CEMS does not measure TDCE directly, it measures all VOCs and reports Total Hydrocarbons as TDCE. The CEMS is not necessary as daily recordkeeping and frequent inventory audits are sufficient to verifying usage. Other facilities are not subject to this overregulation.

The permit defines the type of t-DCE formulation that can be used and requires the use of specific manufacturer's information on the composition of the t-DCE containing material (Material Content requirement) for compliance demonstration. Using daily usage records and material t-DCE contents as determined by the Material Content requirement of the permit, the facility is required to calculate t-DCE emissions using formulas specified in the permit and record total t-DCE emissions for each operating day, including emissions from evaporation loses outside coating rooms. Finally, the permit requires the facility to calculate and record the 365-day rolling sum of t-DCE emissions for the previous 365-day period.

- **$PM_{10}/PM_{2.5}$ limits**

The permit contains federally enforceable limits on PM_{10} and $PM_{2.5}$ emissions such that the facility remains below Part 70 permitting thresholds (synthetic minor limits), and to comply with applicable NAAQS standards for PM_{10} and $PM_{2.5}$. The permit includes Material Content requirements, which establish the maximum allowable solid content of the VOC and water-based spray coatings used at the facility. The facility will show compliance with the emission limits by establishing maximum allowable material usage, or process throughput, enforceable control equipment operation, emission factors and transfer efficiencies from stack testing and daily emission calculations. Daily recordkeeping of operation and material usage is required to ensure compliance with these requirements. Because the sum of limited emissions at each stack results in allowable emissions of PM_{10} and $PM_{2.5}$ below 90 tons per year, and compliance verification with stack limits is conducted on a daily basis, it was deemed sufficient to demonstrate compliance with synthetic minor limits for PM_{10} and $PM_{2.5}$.

The permit requires the facility to show continuing compliance with PM_{10} and $PM_{2.5}$NAAQS standards by establishing PM_{10} and $PM_{2.5}$emission limits at every emission point based on the results of the dispersion modeling. In addition, each emission unit is required to vent to a specific emission point and to operate control equipment that is consistent with the assumptions made in the dispersion model. Demonstration of compliance with the emission limit at each emission point is based on a daily calculation of actual emission rates based on records of actual operating rates, known and approved emission factors or transfer efficiencies for each emission unit, and enforceable control equipment performance. The calculations for this compliance demonstration are defined in the permit for each emission point for which there are no limitations on the allowable hours of operation, and/or allowable process throughput is less than design capacity or the design capacity is not known, and/or the emission factor, transfer efficiency or control efficiency could change after testing is conducted to verify these parameters assumed for calculations. In addition, dispersion parameters assumed by the model, such as stack height, discharge direction, etc., are also enforced as permit conditions. Changes to these dispersion parameters trigger revisions to the modeling for NAAQs and the AERA analysis.

Some emission units, such as coining units modeled in compliance with applicable NAAQS and health benchmarks, using their calculated unrestricted potential to emit, but modeled assuming daily limited hours of operation. The permit includes restrictions of on these units to operate within the window of hours in each day that were assumed in the modeling. Since the facility did not propose any limitations on capacity, throughput, or emissions, the only compliance demonstration that is needed is records of the time of each day when these units are in operation of the is necessary for these units. Additionally, the permit does not have flexibility provisions for coining units.

Emission factors, transfer efficiencies and pollution control efficiencies are used to show the facility remains below Part 70 permitting thresholds, and to demonstrate compliance with emission limits at every emission point used in the model. Several of these parameters will be verified by performance testing required by the permit. Emission factors and transfer efficiencies will be updated by the most recent MPCA-approved performance test required by the permit. If revised emission factors or transfer efficiencies change and there has not been a modification at the facility that necessitates increase in emission limits, the permit requires the use of ARM requirements to update the emission factor or transfer efficiency used in compliance calculations without having to change the emission limit at each release point. If the facility wishes to make modifications to emission units that need increase in emissions limits, allowable process rates or required control efficiencies a major permit amendment will be required to revise these. Changes to emission limits trigger revisions to the modeling for pollutants for which a NAAQs analysis was conducted.

- **Lead limits**

The permit contains state and federally enforceable limits on lead emissions such that the facility remains below the lead NAAQS standard and lead ingestion health benchmark. The emission limit to remain in compliance with the lead NAAQS standard is established at each emission point as pounds per day 92-day rolling average. The emission limit to remain in compliance with the lead ingestion health benchmark is established at each emission point as pounds per year 365-day rolling sum.

The facility will show compliance with lead NAAQS and to remain below the lead ingestion health benchmark by establishing emission limits at every emission point based on the results of the dispersion modeling and AERA. With few exceptions, both separate daily calculation of compliance with the lead NAAQS and the lead ingestion emission limits are required. In addition to transparency, this is required because if the emissions calculations show there is non-compliance with one set of limits, the compliance status for the other set of limits can be readily verified and the facility would be able to promptly address the situation based on the specific averaging times of each set of limits. In addition, each emission unit is required to vent to a specific emission point and to operate control equipment consistent with the assumptions made in the dispersion model. Compliance demonstrations with the lead emission limits is based on daily calculations of actual emission rates based on daily operating records for every lead emission unit using known emission factors and required pollution control efficiencies. The calculation for these demonstrations is defined in the permit for each emission point for which there are no limitations on the allowable hours of operation, and/or allowable process throughput is less than design capacity or the design capacity is not known, and/or the emission factor or control efficiency could change after testing is conducted to verify these parameters assumed for calculations. The die casting units have an annual cap on lead processing rates and lead emissions to show compliance with the lead ingestion health benchmark. A separate calculation for compliance with 365-day rolling sum limits is required for all the die casting units at COMG 16. Changes to dispersion parameters trigger revisions to the modeling for NAAQS and the AERA analysis.

Selected emission factors and pollution control efficiencies used to determine potential to emit parameters used in the dispersion modeling and AERA will be verified by performance tests required by the permit. Emission factors may be revised based on the results of the most-recent performance test

Commented [A26]: The modeling results are not close to the lead NAAQS standard. There is a large margin of compliance; the emission limits and the limit for compliance with the lead ingestion HBV is the limiting factor. The 92-day-rolling average merely replicates the form of the lead NAAQS.

Commented [A27]: This should be RASS.

required by the permit. In order to revise emission factors based on stack test results, the permit requires the use of ARM requirements. If revised emission factors result in the need to increase emissions limits, further restrict allowable process rates or change required control efficiencies, a major permit amendment will be required to revise enforceable emission factors and may include a revised dispersion model in order to determine revised (lowered) process throughput and emission limits.

- **Nitrogen dioxide (NO_2) limits**
  The dispersion model showed compliance with one-hour NO_2 NAAQS when using emissions derived from heating and air conditioning units with a total allowable heat input of 10.69 MMBtu/hr and 2.29 MMBtu/hr at the North Building (STRU 38) and South Building (STRU 42), respectively. In order to comply with the NAAQS, the permit contains a federally-enforceable limit on total non-engine combustion capacity at each building and defined months of the year when they can be operated. The Permittee is required to keep an up-to-date inventory, including individual and total capacity, of all non-engine combustion units and is required to show that the total capacity remains below the permit limit, including recordkeeping of when the units are being operated. Changes emission limits trigger revisions to the modeling for pollutants for which a NAAQs analysis was conducted.

- **Coating room permanent total enclosures**
  Enforcement investigations prior to the Agreement revealed that the facility emitted HAPs (TCE) greater than major source thresholds since 2002 and, therefore, was subject to the requirements of 40 CFR pt. 63, subp. MMMM - National Emission Standards for Hazardous Air Pollutants for Surface Coating of Miscellaneous Metal Parts and Products. As a result of the Agreement, permit conditions were incorporated into this permit action such that HAP-containing materials are not permitted to be used at the facility; therefore, 40 CFR pt. 63, subp. MMMM no longer applies. However, Permit No. 12300341-003 did not contain all the necessary enforceable permit conditions to ensure coating operations were operated and maintained in permanent total enclosures as per current accepted standards for proper operation. As a result, the methods required to maintain coating rooms as permanent total enclosures required under Subpart MMMM were adapted into the permit. MPCA determined these are appropriate and adequate methods to ensure all solvent vapors (VOCs) from coating operations, including t-DCE, are captured inside the coating room and vented to the common stack (STRU 73). The permit conditions require continuous monitoring of coating room pressure differential, including audible and visual alarms that alert when coating room pressure is above the pressure drop limit established by Method 204 of Appendix M to 40 CFR Part 51. The permit also requires inspection and maintenance of pressure drop monitoring devices, daily inspection of enclosure integrity, and annual testing of the enclosure to ensure it meets the definition described above following EPA Method 204 in Appendix M of 40 CFR Part 51.

  During remediation investigations required by the Agreement, solvent vapor intrusion into sub-slab vapor space was detected, further indicating that the coating rooms were not being maintained as total enclosures. Subsequently, in addition to the mitigation system described in Section 3.2.2, the Order required that the facility install and maintain a permanent, impenetrable barrier on the concrete floors of each coating room such that no solvent vapors penetrate and further contaminate the sub-slab vapor space. The permit requires inspections of the floor coating (Retro Coat) for degradation each operating day, including maintenance, reporting, and shut-down requirements if degradation is observed.

  Some coaters at the facility operate outside of a coating room. These coaters use water-based or UV coating (very low VOC). The unrestricted potential emissions were modeled from these units and the results demonstrated compliance with the applicable NAAQS and health benchmarks. Therefore, the permit authorizes operation of these units outside of a coating room (total enclosure) and under the modeled conditions.

Commented [A28]: This is a mischaracterization. Water Gremlin self-reported the TCE issue and resolved all agency concerns.

Commented [A29]: Applying and enforcing regulations that do not apply to a facility is inappropriate and unnecessary. There is no regulatory basis for applying the NESHAP requirements to non-NESHAP operations.

- **Solvent vapor remediation system emissions**
  The permit requires sampling of the remediation system as required by the MPCA Remediation Division prior to the first (lead) canister, between the two canisters in-series, and after the second (lag) canister to detect emissions and verify GAC media quality. Based on manufacturer's operation recommendations, the permit requires GAC canister replacement after 300 days of continuous operation or sooner if recommended by the manufacturer. There is a sunset provision for this requirement in the permit that will become effective when the MPCA Remediation Division approves the removal of the GAC canisters for emissions control from the remediation stack. The uncontrolled emissions from the remediation stack have been characterized as part of the AERA analysis to ensure protection of human health in the event of cessation from GAC canister operation.

Commented [A30]: As noted above, these provisions should be removed from the permit.

- **Verification of process records as primary compliance demonstration method for t-DCE emission limits.**
  The MPCA deemed it prudent and necessary to have a primary method of compliance demonstration which should be evaluated for reliability in more than one way. As described in Section 3.3.2 above, the permit requires the facility to track usage and handling of t-DCE-containing materials by manual weighing t-DCE-containing materials on a daily basis. This is the primary compliance demonstration method.

  During 2021 and the first quarter of 2022, Water Gremlin operated at t-DCE emission rates very close to the t-DCE emission limits established in the permit to protect human health based on the Minnesota Department of Health's Risk Assessment Advice (see Figure 1). The existing ambient monitoring network measurements confirm that the coating operation impacts for the last quarter of 2021 and first quarter of 2022 expressed as 365-day rolling average are near the maximum ambient concentration deemed to be protective of human health (see Figure 2), even after taking into account that coating lines did not operate between August 24, 2019 and January 22, 2020.

Commented [A31]: This is inaccurate. There were no limits established during this timeframe. See the comments in the petition for contested case hearing and permit comment letter.

Commented [A32]: See the comments in the petition for contested case hearing and permit comment letter.

  Water Gremlin has not made any specific commitments to accept enforceable conditions that will further reduce emissions to levels below the permit t-DCE emission limit during the life of the permit. Therefore, the margin between the permit limit and the Permittee's anticipated operations is small, meaning that small deviations from the permit conditions have the potential to result in emissions exceedances over the permit limit and, therefore, the compliance verification process needs to be as frequent as possible. To that end, the form of the emission limit is an annual limit based on a 365-day rolling sum. Daily recordkeeping to show compliance is required by the permit and this will make exceedances less likely because the Permittee will evaluate its usage and take corrective actions on a daily basis.

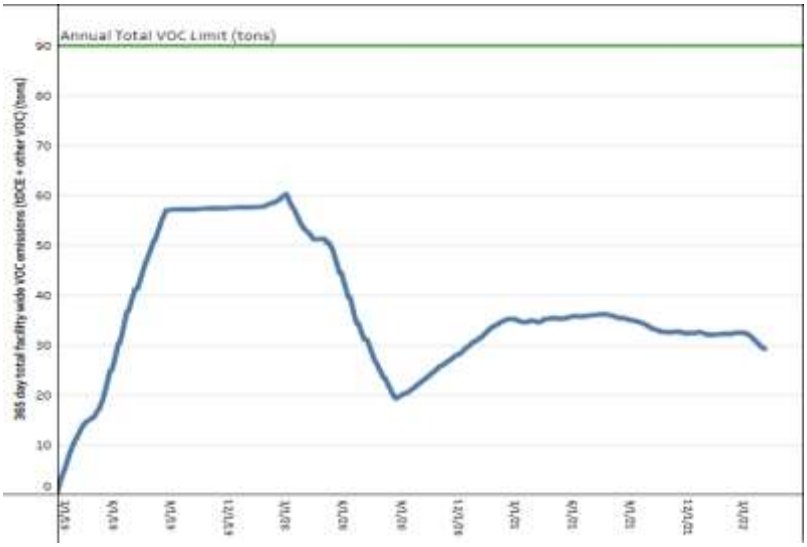
Commented [A33]: This is incorrect. See comments in the petition for contested case hearing and permit comment letter.

Commented [A34]: See comments in the petition for contested case hearing and permit comment letter.

  To verify that the daily manual tracking and recordkeeping is accurate and reliable, the permit includes two types of evaluations or audits of the primary compliance demonstration methods. The first audit method is the operation on a CEMS at the coater stack (STRU 73) along with the use of a correlation of solvent usage versus CEMS readings at the stack. The second method is a usage audit based on t-DCE containing material purchasing records and t-DCE containing material inventory at hand.

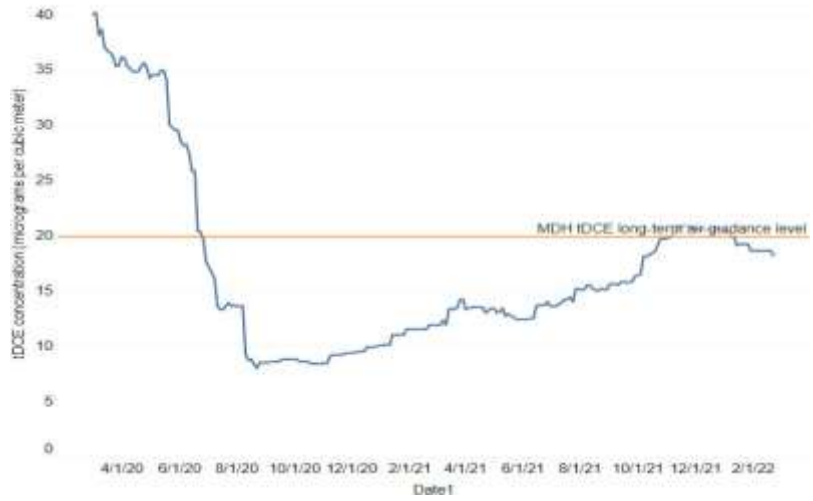
Commented [A35]: The CEMS is neither accurate, as it does not measure TDCE, nor reliable, as it reports total hydrocarbons. The CEMS should not be a permit requirement. MPCA has other methods of verifying usage and recordkeeping, such as the usage audit.

Figure 1. Cumulative annual VOC emissions, including t-DCE emissions*



* Coating lines did not operate between August 24, 2019 and January 22, 2020, by MPCA administrative order. Data is included in Attachment 6.

Figure 2. Highest 365-day rolling average concentrations of t-DCE monitored around Water Gremlin*



*Data is included in Attachment 6

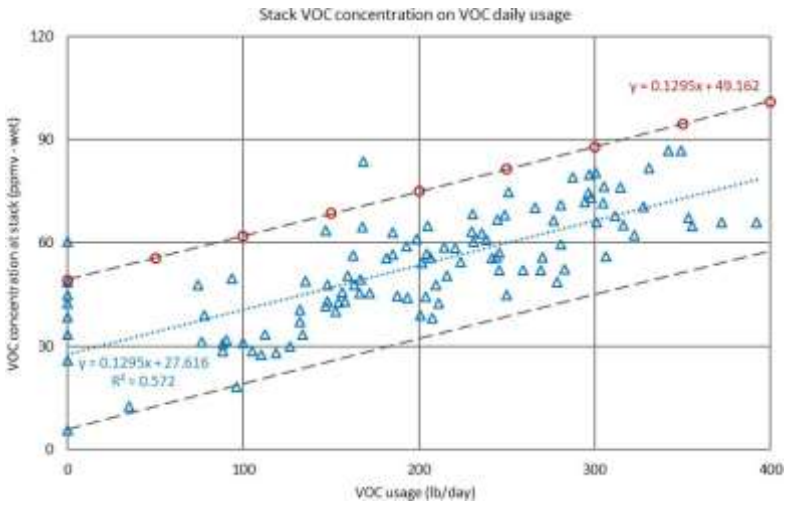
Commented [A36]: This figure shows the highest of the five monitors and represents them as affecting a single receptor, which is inaccurate.

Correlation of solvent usage versus CEMS readings at the stack

The permit requires the facility to install, operate, and maintain a CEMS that records actual VOC emission concentrations at the stack, as ppmv-wet Total Hydrocarbon Concentration (THC) as t-DCE. CEMS for VOCs are instruments that automatically and continuously measure concentrations of VOCs in air streams. In cases where there are more than one VOC compound present in the gases, the CEMS do not directly measure any specific VOC based its specific chemical composition. In the case of Water Gremlin, there are more than one VOC compound in the flue gases from coating operations, but the largest proportion is t-DCE. The use of CEMS in this case is considered a screening method to estimate VOC emissions because the results are a very good indicator of an emissions trend as it should follow the same trend as the records of solvent usage within an acceptable range. The permit requires the facility to keep electronic records of CEMS data and to submit monthly reports of measurements and conducted audits. Each day of coating operations, the CEMS results will be compared to an established correlation with t-DCE/VOC usage as a quality control indicator of t-DCE/VOC records. If the CEM results do not fall within the correlation envelope, it will trigger an audit of the recordkeeping process to be conducted by Water Gremlin. Any daily analysis where the CEMS readings fall outside this acceptable range will be reported to the MPCA along with the results of the audit.

The acceptable range between t-DCE/VOC usage records and CEMS results required by the permit was established by finding a linear trend between the emission values measured by the CEMS reading at the coating room stack (STRU 73) and the expected emission values calculated from daily t-DCE VOC usage based on daily usage of t-DCE containing coatings (daily usage value). The latter is required for compliance with the permit. For any of the 107 daily t-DCE/VOC usage values recorded from January 30, 2020 through June 3, 2020, the associated CEMS reading value (as ppmv-wet of THC as trans-1,2-Dichloroethylene) fluctuates around the trend line; that is, theoretically, there is a 50 percent chance for CEMS value to be above the trend and 50 percent chance to be below it (see Figure 3). Attachment 7 “Correlation of Solvent Usage Versus CEMS Readings at the Stack” includes the complete analysis of this data set.

Figure 3. Scatter plot of t-DCE usage versus CEMS data and regression curves



Commented [A37]: The correlation is not valid. It was based off measurements of THC, not TDCE, and correlated to usage tracked at different times. The usage is tracked by operating day, 6 am to 6 am. The CEMS typically reported results around 9 or 10 am, and not always based on the same operating hours.

Commented [A38]: The range was calculated using a 95% correlation, where 5% of the time BY DEFINITION the results would be outside the range. MPCA has years of data. It makes no sense to hold WG to a range that is based on different pollutants and to call values outside the range deviations.

While the trend line, expressed mathematically as y = 0.1295x + 27.616 where "x" equals daily VOC from t-DCE coatings usage and "y" equals the daily CEMS reading, reflects the central tendency of data association, it is the two dotted lines nearly parallel to the trend line that shows the spread of the data. For a given "x", there is a 95 percent chance of seeing a "y" value inside the area between the two dotted lines, known as the 95 percent confidence interval. Because the curve for the upper end of the 95 percent confidence interval is generated through a number of steps (regression analysis), we found an approximate equation for the curve, expressed as y = 0.1295 x + 49.162, we call it the upper bound equation. A complete description of the observed data for this situation includes both the trend and the data spread. See the Table 6 below, Attachment 7 and Figure 3 above.

In order to demonstrate proper accounting of t-DCE/VOC (mostly t-DCE emissions) through daily usage records, the Permittee is required to calculate "x", which is daily t-DCE/VOC usage from t-DCE coatings, used each day and use that value to calculate the corresponding "y" value in the upper end of the 95 percent confidence interval (predicted CEMS reading). The Permittee can then see whether or not the actual CEMS reading for the day exceeds the upper end value calculated as described in the permit. If the actual CEMS reading for that day is greater than the CEMS reading predicted by the upper bound equation, this indicates that actual *VOC* usage is greater than what is being recorded. If this is the case, the Permittee must immediately audit VOC solvent usage records to determine the cause of the discrepancy, implement the needed corrections and report it as a deviation. In addition, the permit requires the submittal of a monthly VOC usage and CEMS results report that must include the results of any audit conducted as a result of this CEMS verification requirement.

Commented [A39]: This is not an accurate statement and would not indicate greater VOC usage.

Table 6. Linear regression data derived from actual t-DCE usage and CEMS data (1/13/2020 to 6/6/2020)

x (lb/day)	0	50	100	150	200	250	300	350	400
UPL (ppmv – wet)	49.41	55.69	62.04	68.43	74.88	81.38	87.94	94.56	101.22
Upper Bound Equation	49.16	55.64	62.11	68.59	75.06	81.54	88.01	94.49	100.96
% Relative Difference	-0.50	-0.10	0.12	0.23	0.24	0.19	0.08	-0.07	-0.26

Quarterly VOC solvent purchase and inventory audits and audit reporting

Each calendar quarter, the Permittee is required to audit purchase records and existing inventory of t-DCE-containing material, and t-DCE -containing material usage records, and keep records of each audit. The Permittee is required to submit the results of the quarterly audits with the annual report by the 31st of January. The Permittee is required to review and correct as needed the tracking of t-DCE containing materials if the audit shows significant discrepancies. The permit requires the submittal of a monthly VOC usage that must include the results of any audit conducted as a result of this quarterly VOC solvent purchase and inventory audit.

Commented [A40]: Redundant to require an audit every time the correlation equation is out of bounds AND every quarter. Inventory checks should be sufficient.

- **Emission units without compliance demonstrations**

  The combustion sources modeled in compliance with applicable NAAQS and health benchmarks, using their calculated unrestricted potential to emit, which were listed as emission rates at the STRU level. The permit does not have flexibility provisions for the combustion units associated with EQUI 101, EQUI 102, EQUI 103, EQUI 104, units in COMG 6 and EQUI 222 (Natural Gas Bake Oven). Since the facility did not propose any limitations on capacity, and only natural gas can be used by design, no compliance demonstration is necessary for these units as these cannot physically run at a higher rate.

3.4 Performance testing

The facility made several informed assumptions in limited potential to emit calculations and dispersion characteristics requirements to determine and/or verify emission factors and emission rates to demonstrate compliance with applicable VOC, t-DCE, PM_{10}/$PM_{2.5}$, and lead emission limits. The permit requires verification of emission factors for several emission units as well as testing for compliance with emission

limits. Appendix E to the permit contains the minimum recordkeeping that must be done during each stack test to verify emission factors and other compliance demonstrations. Appendix E also lists and ~~the~~ references EPA Stack Test Methods for each pollutant. The MPCA may deviate from this list in compliance with Minn. R. 7017.2020. Emission factors, transfer efficiencies stack flow rates and other compliance demonstration parameters may be re-set based on approves stack testing results based on ARM permit conditions described at above.

- **Battery terminal post coaters**
  The permit requires operation and maintenance of VOC/t-DCE CEMS and daily validation of results as described in Section 3.3.8. The CEMS has to be calibrated and maintained to ensure proper operation. In addition, the permit requires testing to measure PM_{10} and $PM_{2.5}$emission rates from coaters that apply coating using spray application, including VOC, water-based, and UV coaters, within 180 days following the issuance of the permit and every 60 months thereafter using EPA Reference Methods 201A and 202 (or other methods as approved by MPCA through the submittal and approval of a test plan) for $PM_{10}$and $PM_{2.5}$. The purpose of the test is to verify emission factors and pollution control efficiency and demonstrate compliance with $PM_{10}$and $PM_{2.5}$emission limits enforced by the permit at STRU 73.

- **Lead processing units**
  In order to demonstrate the efficacy of emission factors used in PTE calculations, the permit requires recurring performance testing scheduled such that all Nederman filters and Smog Hogs are tested at least once every five (5) years using EPA Reference Methods 201A and 202 for PM_{10}/$PM_{2.5}$and Method 12 for lead. The purpose of the tests is to verify emission factors and pollution control efficiency, and demonstrate compliance with PM_{10}, $PM_{2.5}$, and lead emission limits enforced by the permit

Commented [A41]: The equipment is similar between die cast machines, Nederman filters, and smog hogs. Testing a sample of the equipment should be sufficient.

- **Coating room permanent total enclosure**
  The facility conducted an AERA in order to determine compliance with applicable health benchmarks, specifically t-DCE. Since the facility has characterized the main source of t-DCE emissions as being emitted from STRU 73, the permit requires the facility maintain all battery terminal post coaters using t-DCE in rooms that are permanent total enclosures meeting the criteria of Method 204 in Appendix M of 40 CFR Part 51. The facility conducted a performance test on September 25 and October 3, 2019, in which compliance with the pressure drop limit described under Method 204 in Appendix M of 40 CFR Part 51 and the permanent total enclosure criteria of EPA Method 204 in Appendix M of 40 CFR Part 51 was demonstrated. The MPCA concluded the pressure drop limit required by 40 CFR pt. 63, subp. MMMM was an appropriate and necessary operating standard to ensure the coating room operates as a total enclosure. This minimum pressure drop of less than or equal to -0.007 inches of water and other operational requirements are enforced by the permit as appropriate and necessary conditions under Minn. R. 7007.0800. With this operation requirement in the coating rooms, the AERA is approved to assume all coating emissions in the coating rooms connected to STRU 73 do indeed vent to STRU 73. The permit requires recurring performance testing on an annual basis for all coating rooms in COMG 5 to ensure the permanent total enclosure is being operated and maintained according to the permit.

3.5 NAAQS dispersion modeling

The facility was required to complete dispersion modeling per the MPCA's current dispersion modeling practices to show modeled compliance with NAAQS for criteria pollutants, including the 24-hour PM_{10}, annual and 24-hour $PM_{2.5}$, annual and 1-hour NO_2, and 3-month lead standards specified under 40 CFR pt. 50. The results of the dispersion modeling are shown in Table 7. Operating restrictions and dispersion parameters were assumed when the modeling was conducted, so these have been incorporated as emission limits and operation requirements. Compliance with these operating restrictions and dispersion characteristics is effective on the date of permit issuance (e.g., coating usage, lead throughput, operation of control equipment at the assumed control efficiencies, increased stack height, stack direction, flue gas exit velocity, etc.). In addition, per MPCA practice, a table of the modeled parameters has been added to the

permit as Appendix C. Other than the specific operating restrictions mentioned above, the parameters listed in Appendix C of the permit describe the operation of the facility at maximum capacity. In other words, the parameters listed in Appendix C represent the minimum dispersion parameters at the maximum emission rates allowed by this permit. Compliance with the operation restrictions and dispersion characteristic requirements ensure compliance with the worst-case conditions of air emissions allowed by this permit. The purpose of listing the parameters in the permit appendix is to provide a benchmark for determining if and when additional modeling is required.

Table 7. NAAQS/MAAQS modeling results

Pollutant	Averaging Period	NAAQS standard ($\mu g/m^3$)	MAAQS standard ($\mu g/m^3$)	Total modeled concentration (includes background and nearby sources ($\mu g/m^3$)	Percent of standard (%)	
					NAAQS	MAAQS
Lead	Rolling 3 mo. Avg	0.15	0.15	0.13	84.31	84.31
NO_2	1-hr	188.0	188.0	149.83	79.70	79.70
	Annual	99.7	99.7	22.66	22.66	22.66
PM_{10}	24-hr	150.0	150.0	66.~~78~~75	44.~~52~~50	44.~~52~~50
$PM_{2.5}$	24-hr	35.0	35.0	33.~~81~~84	96.~~60~~69	96.~~60~~69
	Annual	12.0	12.0	11.~~39~~40	~~94.94~~95.03	~~94.94~~95.03

- **Equivalent or Better Dispersion (EBD) modeling and computer dispersion modeling triggers for NAAQS** Appendix C contains the benchmark parameters for determining if additional EBD or computer dispersion remodeling is required. The permit contains EBD modeling conditions that trigger when modifications cause a change to dispersion parameters or emission rates used in the previous model. If the modification does not demonstrate equivalent or better dispersion, the facility must conduct computer dispersion remodeling under the constraints of the proposed modification. The permit requires EBD or remodeling even for changes that do not require a permit amendment because continued compliance must be demonstrated regardless of requirements to submit permit applications or notifications. Additionally, in the case of modeling for PM_{10} and $PM_{2.5}$, NOx, and Lead, the emission limits at the stacks are much lower than the respective insignificant permit modification thresholds at Minn, R 7997.1250. Additionally, modeling shows a compliance margin of less than 10 percent for $PM_{2.5}$. Therefore, the verification of compliance with NAAQS may not be contingent to the triggering of a permit amendment requirement because this would not ensure continued modeled compliance with NAAQAs.

3.6 Air Emissions Risk Assessment (AERA)

The facility air emissions were characterized by an AERA to determine if emissions of any air toxics with known health benchmarks from the facility sources were predicted to cause ambient concentrations of air toxics above any known health benchmarks. Changes to dispersion parameters, emission rates of modeled air toxics, revision of health benchmarks to more stringent values for modeled air toxics or the introduction of new chemicals with known health benchmarks trigger revisions to the modeling for AERA analysis.

The active ingredient in the VOC solvent (t-DCE) was investigated to determine the emission limit in which the ambient air concentration of t-DCE due to emissions from the facility would remain below health benchmarks. The MDH developed chronic Risk Assessment Advice (RAA) in 2020 specifically for t-DCE air permitting applications at the Water Gremlin facility (Attachment 8). The MDH established the chronic

health benchmark of 20 micrograms per cubic meter (µg/m3) and the sub-chronic health benchmark of 200 micrograms per cubic meter (µg/m3). The chronic RAA is the most protective and it was used to derive the t-DCE annual emission limit to be enforced in the air permit. The chronic health benchmark was used to derive the t-DCE annual emission limit in consideration to the extended prior unpermitted exposures of this community. Because the chronic health benchmark is the most protective, compliance with the chronic health benchmark will ensure compliance with the MDH's sub-chronic health benchmark. On April 22, 2022, Water Gremlin submitted, as part of the comments on the Preliminary Draft Permit No. 12300341-101, a Technical Memorandum on the toxicity value for inhalation for t-DCE. In this Technical Memorandum, Water Gremlin proposed revised chronic and sub-chronic inhalation health benchmarks that are twice as large as those advised by the MDH. The MPCA and the MDH reviewed the April 2022 Water Gremlin's Technical Memorandum and supporting information and concluded it was not appropriate nor sufficient to revise the MDH's 2020 RAA. Attachment 9 documents the MDH's review of the Water Gremlin's Technical Memorandum on the toxicity value for inhalation for t-DCE dated April 22, 2022. The MPCA agrees with MDH's assessment and is therefore t using the chronic health benchmark of 20 micrograms per cubic meter (µg/m3) and the sub-chronic health benchmark of 200 micrograms per cubic meter (µg/m3) to establish the permit t-DCE emission limit for in support of the Water Gremlin draft Permit No. 12300341-101.

Commented [A42]: See petition for contested case hearing and comment letter regarding risk assessment methods, calculations, and the setting of TDCE limits.

Air impacts from t-DCE were analyzed through an AERA, by reviewing the actual measured t-DCE concentrations in ambient air around the facility and by also reviewing the corresponding facility operation records taken during the period of observations (see Attachment 6). Details of the AERA analysis are included in Attachment 1 and 1a. Given the availability of site-specific ambient air monitoring and t-DCE usage data, a weight of evidence approach was used to show that the facility can emit no more than 32.6 tons per year of t-DCE in order to remain below the MDH's health benchmark. This value is lower than the proposed limit that considered the AERA results alone. The analysis conducted to establish a limit of 32.6 tons per year of t-DCE is described in detail in Section 3.6.2. Therefore, the permit contains an enforceable permit limit such that t-DCE emissions remain below 32.6 tons per year 365-day rolling sum of all t-DCE emissions, both inside and outside coating rooms. A revised AERA and review of ambient monitoring data and solvent usage will be necessary if the facility requests a change in the VOC solvent formulation through a major amendment as required by the permit.

Commented [A43]: The ambient monitors are not located where the public is exposed. The health benchmark is a chronic benchmark meant to protect against a lifetime of exposure and is not the correct benchmark to apply.

Additional emissions were characterized by the AERA, including the emissions from the new UV coating operations, water-based coating, paired sub-slab and indoor air testing, and emissions from the controlled and uncontrolled air releases from the remediation system, to determine if emissions of any air toxics from these sources were above any known health benchmarks. UV coating operations result in emissions of the following chemicals or chemical types: Isobornyl Acrylate, 4-hydroxybutyl acrylate, 2-Benzyl-2-dimethlyamino-1-(4-morpholino-phenyl)-1-butanone, Rheological Additive, Visible photoinitiator, Photoinitiator, and Acrylated Resin. The MPCA does not have a health benchmark for any of these chemicals (those with known names and CAS#s) from any of the information sources used to obtain health benchmark information, including MDH, EPA, Cal EPA, and ATSDR. Since Michigan EGLE developed a health benchmark for isobornyl acrylate, a screening assessment was completed for this compound. The annual modeled concentration of isobornyl acrylate was approximately two micrograms per cubic meter, and the Michigan EGLE health benchmark was 14 micrograms per cubic meter annual average. Therefore, the concentration of this isobornyl acrylate that will be used at this facility was below a level at which further permit limits or further analysis would be recommended.

The water-based coating operation, and any other VOCs related to coating, were tested for significance with respect to health benchmarks in a screening risk assessment spreadsheet (RASS) based on either indoor air testing or laboratory analysis data. When these pollutants were measured below detection level concentrations, the detection level concentration was used to estimate emission rates. Any emission rate that resulted in an air concentration less than 10 percent of an inhalation health benchmark was excluded from further analysis and permit limit consideration.

In addition to showing compliance with lead NAAQS, lead was also investigated to determine if emission limits would be necessary to keep lead emissions below the 0.15 micrograms per cubic meter ingestion health benchmark. The AERA modeled maximum hourly and annual emission rates from each lead processing unit that would ensure the facility would remain below the lead health benchmark. These emission rates from each lead emission point are in the permit as state (health benchmark) enforceable or federally-enforceable (lead NAAQS) limits, including emissions calculations and recordkeeping.

- **Computer dispersion modeling triggers for AERA**
  Appendix C contains the benchmark parameters for determining if additional computer dispersion remodeling is required. The permit contains conditions that trigger when modifications cause a change to dispersion parameters or emission rates used in the previous modeling and AERA. If the modification triggers AERA updates, the facility must conduct computer dispersion remodeling and air toxics analysis under the constraints of the proposed modification. The permit requires remodeling and revised RASS/AERA even for changes that do not require a permit amendment because continued compliance must be demonstrated regardless of requirements to submit permit applications or notifications. In the case of modeling for lead, the emission limits at the stacks are much lower than the respective insignificant permit modification thresholds at Minn, R 7007.1250. In the case of t-DCE and other evaluated air toxics, the actual operation is expected to be very close the t-DCE emission limits. Therefore, the verification of compliance with modeling and AERA parameters for any of the chemicals of concern cannot be contingent to the triggering of a permit amendment requirement because this would not necessarily ensure continued compliance with health benchmarks.

- **Justification for MPCA Revision to Water Gremlin's Proposed t-DCE Emission Limits**
  An Air Emissions Risk Analysis (AERA) is an iterative process, where emissions are incorporated into an air dispersion model to estimate air concentrations around the facility. The air concentrations are then compared to health benchmarks to estimate cancer risks and hazard indices. Water Gremlin submitted with the final air permit application a final Risk Assessment Spreadsheet (RASS) with a STRU 73 emission rate of 76 tons per year, and a total facility emission rate of 77.23 tons per year. Water Gremlin modified the 1,2-(*trans*)-dichlorotheylene (t-DCE) risk characterization in the MPCA RASS from MPCA's webpage by deleting the MDH Risk Assessment Advice of 20 ug/m^3 and replacing that value with a Provisional Peer Reviewed Toxicity Value (PPRTV) from EPA's Superfund Program of 40 ug/m^3. This resulted in a total hazard index of 1.18 for the full facility. The MPCA and MDH have agreed upon and implemented a hierarchy for toxicity value information sources for over a decade. MDH toxicity values are first in the hierarchy and PPRTV values are fourth in this hierarchy. Therefore, MPCA would apply a value from the MDH before looking for a value from the EPA Superfund Program. Using the MDH value of 20 ug/m3, the total facility hazard index would be 2.36.

  Since a total hazard index represents the summed potential impacts from all pollutants, MPCA AERA guidance allows facilities to refine their hazard index summations into groups that reflect individual human health endpoints (e.g., respiratory, neurological, etc.). The MDH health benchmark for t-DCE was based on the sensitive health endpoint of immunological changes which is categorized in the 'blood/hematological' endpoint in the RASS. At the proposed emission rates from Water Gremlin, the endpoint-refined hazard index was 1.98. Initially Water Gremlin, for early modeling purposes, rounded down previous submittals of endpoint-refined hazard index to one significant figure and they were using the pre-agreed upon toxicity value hierarchy. From the MPCA's perspective, there was sufficient data on actual ambient monitoring measurements of t-DCE around Water Gremlin, concurrent daily t-DCE solvent use reports, and, therefore regardless of the RASS results in the final iteration, any actual facility-impacted concentrations measured from the ambient monitoring around Water Gremlin and reported actual t-DCE usage rates would be considered and reconciled for the final decision on the

Commented [A44]: See petition for contested case hearing and comment letter.

Commented [A45]: The multiple conservative assumptions are part of the reason that risk results are reported to one significant digit: additional precision is not realistic or appropriate.

Commented [A46]: See petition for contested case hearing and comment letter regarding the TDCE limits.

permit emission limit for t-DCE. The current result in the Water Gremlin RASS rounds to 2, and therefore requires further refinement.

Notably, Water Gremlin was operating right near the intended t-DCE limit, and actual ambient monitoring results showed that the modeling was under-predicting air concentrations, MPCA determined that rounding of the endpoint-refined hazard index was not sufficiently protective in this situation. Furthermore, Water Gremlin modified the MPCA RASS to include a toxicity value outside of the MPCA hierarchy, and therefore MPCA has developed a corrected RASS that follows MPCA guidance based on all other data provided by Water Gremlin. MPCA determined the emission rate of t-DCE in an un-modified MPCA RASS so that the final endpoint-refined hazard index was 1.00. These MPCA's corrected RASS t-DCE emission rates were 37.5 tons per year at STRU 73 and 38.7 for the total facility. MPCA's corrected RASS is included in Attachment 1.a.

However, after the MPCA analyzed Water Gremlin's actual ambient air monitoring results for t-DCE and the corresponding t-DCE usage records, the MPCA compared these to the predictions from the MPCA's corrected RASS. It was based on this comparison that the MPCA concluded the air dispersion modeling and corrected MPCA RASS for t-DCE was under-predicting actual impacts on ambient air concentrations of t-DCE. Therefore, MPCA determined that consideration of the reported daily t-DCE solvent use and ambient air measurements of t-DCE needed to be included in setting the t-DCE limit. The MPCA aligned the individual ambient air monitoring results with reported daily use of solvent from Water Gremlin. The ambient air measurements of t-DCE bracket 20.0 ug/m^3 (the MDH chronic health benchmark for t-DCE) at an annual use of 32.6 tons per year as shown below.

Site	Sample Date	Pollutant	Rolling Mean (ug/m3)	365 Day Rolling Total (tons)
W	10/25/2021	Trans-1,2-Dichloroethylene	19.81	32.57
W	10/28/2021	Trans-1,2-Dichloroethylene	19.82	32.52
W	10/31/2021	Trans-1,2-Dichloroethylene	19.82	32.50
W	11/3/2021	Trans-1,2-Dichloroethylene	19.87	32.60
W	**11/6/2021**	**Trans-1,2-Dichloroethylene**	**19.98**	**32.59**
W	**11/9/2021**	**Trans-1,2-Dichloroethylene**	**20.42**	**32.64**
W	11/12/2021	Trans-1,2-Dichloroethylene	20.42	32.60
W	11/18/2021	Trans-1,2-Dichloroethylene	20.98	32.60
W	11/21/2021	Trans-1,2-Dichloroethylene	20.98	32.44
W	11/30/2021	Trans-1,2-Dichloroethylene	20.71	32.42
W	12/3/2021	Trans-1,2-Dichloroethylene	20.71	32.40
W	12/6/2021	Trans-1,2-Dichloroethylene	20.62	32.42
W	12/9/2021	Trans-1,2-Dichloroethylene	20.62	32.39
W	12/12/2021	Trans-1,2-Dichloroethylene	20.62	32.45
W	12/15/2021	Trans-1,2-Dichloroethylene	20.60	32.56
W	12/18/2021	Trans-1,2-Dichloroethylene	20.60	32.55
W	12/21/2021	Trans-1,2-Dichloroethylene	20.59	32.48
W	12/27/2021	Trans-1,2-Dichloroethylene	20.84	32.27
W	12/29/2021	Trans-1,2-Dichloroethylene	20.72	32.21

Therefore, after considering all the evidence, not just modeling and the MPCA corrected RASS, the MPCA staff recommend that Water Gremlin be limited at a total facility level at 32.6 tons per year to protect public health and ensure the facility did not exceed the health benchmark limit of 20.0 ug/m^3. Although 32.6 tons per year is approximately 16 percent lower than the modeled result, it isappropriate

Commented [A47]: No limit had been established

Commented [A48]: There are many reasons ambient monitoring results would be higher than modeled results, including contamination from other sources beyond the facility. This is one reason that it is established practice to use modeling and emission levels to determine the facility's impact on ambient air.

Commented [A49]: Minn. R. 4717.8600 defines the limit as 1, not 1.0 or 1.00.

Commented [A50]: See petition for contested case hearing and comment letter.

based on the weight of the evidence provided by actual ambient air measured concentrations of t-DCE around the facility and the associated t-DCE usage at the facility. It must be noted there are no other known sources of t-DCE around the Water Gremlin facility other than Water Gremlin itself.

The MPCA has followed a weight of evidence approach in this risk management decision pertaining to monitoring and the recommended permit limit of at 32.6 tons per year, as follows:

1) Ambient measurements (t-DCE) are close to the MDH RAA - At the current t-DCE use rate of between 29 and 35 tons annually, 365-day rolling average ambient measurements at the Water Gremlin facility are at or exceeding the MDH chronic health benchmark of 20 µg/m3. (*https://www.pca.state.mn.us/air/water-gremlin-air-monitoring*)

2) Other on-site sources of t-DCE - The charts on the Water Gremlin air monitoring webpage represent only the t-DCE use in coating rooms, and do not reflect other *t*-DCE air emissions that are emitted at the site (evaporation loses to indoor air outside the coating rooms, remediation stack). These other onsite air emissions encompass about 1-1.5 tons per year of t-DCE. The calculations of t-DCE use in coating rooms do not take into account the t-DCE that is present in waste leaving the facility, this information has not been provided with the permit application.

3) Multiple sources of information - The facility is operating near the proposed total facility permit limit. The current air dispersion modeling efforts for the t-DCE recommended limit, and near their current use, are under-to-accurately predicting the ambient air measurements at the fence line.

4) Chronic (long term) RAA matches planned facility operation - The MDH defines a chronic (long term) exposure as over 8 years or over approximately 10 percent of a person's lifetime. MPCA is using the chronic inhalation health benchmark since the permit will be issued for Water Gremlin to operate into the future. (*https://www.health.state.mn.us/communities/environment/risk/docs/guidance/air/tdecinfo.pdf*) (*https://www.health.state.mn.us/communities/environment/risk/docs/guidance/air/airdurations.pdf*)

5) Community concerns - MPCA has received many community requests that MPCA consider past potential trichloroethylene (TCE) exposures in analyses that inform the permit. MPCA has no direct way to account for potential past exposures of TCE in current AERA practices. Therefore, it is prudent that we apply the most health-protective exposure duration (chronic), particularly since the MDH Air Guidance Values for both TCE and t-DCE were developed based on the same sensitive health endpoint of impacts to the immune system.

6) Consistent MPCA practices - In May 2020, the Minnesota legislature passed a partial ban of trichloroethylene use by permitted sources. Part of the legislation requires that TCE replacements be less toxic to human health than TCE. The MDH RAA for t-DCE supports this work. The use of this RAA from MDH is also consistent with the MPCA AERA program, it is not a facility-specific value. (*https://www.health.state.mn.us/communities/environment/risk/docs/guidance/air/tdcesumm.pdf*)

Commented [A51]: See petition for contested case hearing and comment letter regarding the TDCE limits.

Commented [A52]: See petition for contested case hearing and comment letter regarding the TDCE limits.

Commented [A53]: See petition for contested case hearing and comment letter regarding the TDCE limits.

Commented [A54]: See petition for contested case hearing and comment letter regarding the TDCE limits.

Commented [A55]: See petition for contested case hearing and comment letter.

Commented [A56]: See petition for contested case hearing and comment letter.

3.7 Ambient air boundary

During the air dispersion modeling analysis, the Permittee omitted receptors on portions of the facility property. These portions of the atmosphere that may be accessible to the public within the facility property must be excluded from public access (ambient air). The Permittee maintains security fencing along the entire facility perimeter and a controlled access gate. This fence line defines the ambient air boundary used for siting receptors in the air dispersion modeling analysis. The MPCA has determined that the existing security fencing is sufficient to establish an ambient air boundary, based on guidance contained in the 1980

letter from the US Environmental Protection Agency (EPA) Administrator Douglas Costle to Senator Jennings Randolph and the March 28, 2017 MPCA Memorandum "Clarification of MPCA Working Practice to Evaluate the Federal Definition of Ambient Air in Air Quality Dispersion Modeling."" (Appendix D to MPCA Air Dispersion Modeling Practices Manual). This determination is also consistent with the US EPA December 2019 Draft "Revised Policy on Exclusions from 'Ambient Air'." This permit requires the Permittee to comply with a general public preclusion plan, which must be maintained onsite. The Permittee must document any security breaches, as well as identify any security deficiencies and update the Plan accordingly to prevent future breaches. Appendix G to the permit includes a map depicting the ambient air boundary.

3.8 Paired sub-slab and indoor air testing

The Administrative Order executed January 17, 2020, required the Facility conduct paired sub-slab and indoor air testing as a condition for re-starting VOC coating operations. This data will be compared against future test data to determine if VOCs are migrating through the concrete floor. Indoor air samples obtained were tested for a variety of air toxics (EPA Method TO-15) and their respective concentrations reported, in micrograms per cubic meter ($\mu g/m^3$), based on method detection limits (MDLs). If concentrations of chemicals were detected above MDLs, their emission rates were calculated based upon the detected concentrations. For chemicals not detected based on the assumed MDL, emission rates for those chemicals were calculated using the MDL. These emissions were characterized in the AERA by assuming they are emitted through building ventilation systems based on the ventilation rate through the building vent associated with the room whose indoor air was tested.

Commented [A57]: There is no longer need for this indoor air sampling. The agency has multiple years of data and the permanent vapor mitigation system has been installed. These requirements should be terminated.

3.9 Ambient air monitoring

The March 1, 2019, Stipulation Agreement required the facility to conduct ambient air monitoring to determine ambient concentrations VOCs (TO-15), including TCE and t-DCE, around the facility and adjacent properties in order to demonstrate emissions from the facility do not pose an unacceptable risk to human health. The facility prepared and submitted an Ambient Air Monitoring Plan in general accordance with United States Environmental Protection Agency (EPA), Air/Superfund National Technical Guidance Series, Volume IV – Guidance for Ambient Air Monitoring at Superfund Sites (Revised), EPA-451/R-93-007, 1993, and MPCA's Exhibit M.

- **Ambient monitoring pre-permit issuance**

  The ambient air monitoring plan required by the Stipulation Agreement was approved by the MPCA and operation of the monitoring network began March 1, 2019, including five (5) ~~VOC~~ monitors operated by the facility. MPCA independently operated two (2) VOC and two (2) lead monitoring sites in response to community concerns about VOC exposure for vulnerable populations.

- **Ambient monitoring post-permit issuance**

  VOC and t-DCE

  Continued ambient monitoring of VOC and t-DCE concentrations around the facility is required to by the permit demonstrate continuous compliance with the t-DCE health benchmark value. VOC (TO-15) ambient monitoring enables detection of deviations from the expected emissions profile from the facility. The permit requires the facility to monitor according to the Ambient Air Monitoring Plan implemented as a result of the 2019 Stipulation Agreement (Attachment 5).

  Commented [A58]: The tDCE limit is RAA, not HBV. It was not promulgated and has not been through peer review or public comment.

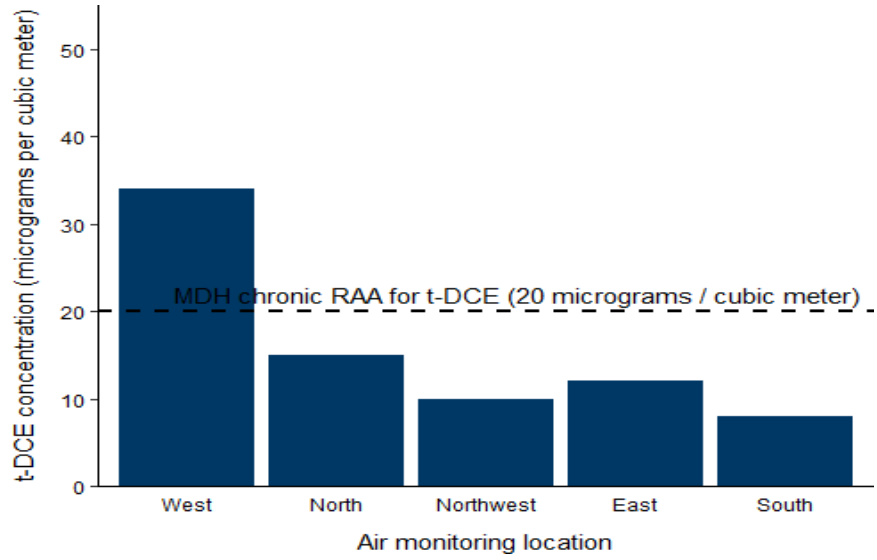
  Commented [A59]: Unnecessary and outside agency norms for facilities.

  The permit allows Water Gremlin to revise the VOC and t-DCE ambient monitoring plan in accordance with MPCA recommendations for acceptable reduction in ambient monitoring requirements. The MPCA's air monitoring staff recommendations for a revised t-DCE and VOC ambient monitoring plan are based on analysis of ambient monitoring data collected from March 1, 2019, to August 1, 2020, to determine if ambient monitoring requirements could be adjusted to align with standard MPCA practices. Based on the analysis, MPCA air monitoring staff recommends the following:

1) Maintain the two (2) monitors located at the West and North sites meeting the following EPA siting requirements:
    a. Permanent site
    b. Mass flow controller
    c. Install platforms
    d. Improve monitoring site security

Monitoring results consistently show the West and North monitoring sites measuring the highest t-DCE and TCE concentrations on average (Figures 4 and 5). These two sites provide a "worst-case scenario" of ambient air t-DCE and TCE concentrations surrounding the facility. Based on these results, t-DCE and TCE concentrations at the other sites are not expected higher on average than t-DCE and TCE concentrations measured at the West and North sites. Therefore, maintaining the West and North sites meeting EPA siting requirements and discontinuing the other VOC monitoring sites will continue to provide representative measurements on ambient t-DCE concentrations around the facility.

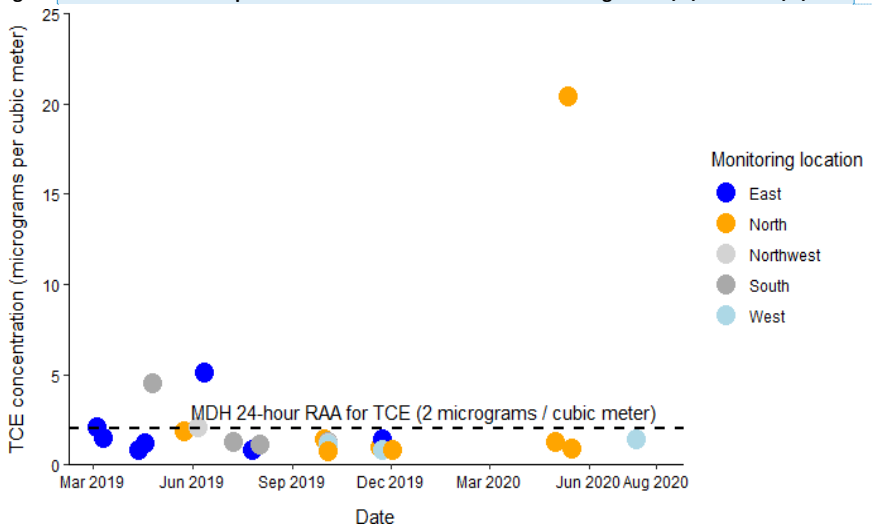
Figure 4: Average t-DCE concentrations at Water Gremlin monitoring sites 3/1/2019 to 8/1/2020



Commented [A60]: Remove references to TCE. TCE is not used by or stored at the facility. Detections of TCE in the ambient monitors have been rare and evaluated. The conclusions of the evaluations have been that the TCE is not originating from the facility. This points to outside influences on the monitors and supports removal of the monitors and reliance upon the model and tracking of usage against a facility limit so these outside influences are not confounding results.

Commented [A61]: This timeframe is not relevant to the current permit period.

Figure 5: Detected TCE sample results at Water Gremlin air monitoring sites 3/1/2019 to 8/1/2020



Commented [A62]: Water Gremlin provided an evaluation showing that the TCE detections were not from the facility. This chart is misleading.

2) Reduce sampling frequency from once every three (3) days to once every six (6) days when coating operations are occurring. Average ambient air concentrations measured around the facility during coating operations once every six days are about the same as average concentrations measured once every three days and the facility's t-DCE throughput (and emissions) do not vary greatly on a day-to-day basis. Therefore, reducing the sampling frequency from once every three days to once every six days would make the facility's sampling schedule consistent with MPCA's VOC air sampling schedule without compromising the representativeness of the measurements.

3) Submit all monthly TO-15 results to MPCA directly from the third-party laboratory within 30 days after the last day of the month. Since t-DCE is a pollutant with potential risks primarily associated with long-term exposure, it is generally not necessary to receive monitoring results within days. It is more important to focus on long-term average concentrations and trends instead of day-to-day monitoring results. Monthly results submissions would suffice for evaluating potential health risks associated with t-DCE exposure and notifying the community of any potential health risks in an appropriate amount of time. This would reduce the frequency which new information is reported to the public, but all monitoring results will still be made publicly available as needed.

4) MPCA Environmental Data Quality Unit may annually review and request amendments.
The facility shall include all of the information above, including monitoring locations, sampling frequency and duration, data submittal process, and a quality assurance project plan (QAPP) in their air monitoring plan. The monitoring plan is not valid until approved by the MPCA Environmental Data Quality Unit. Once the monitoring plan is approved, the facility is expected to operate an air monitoring network and submit results to MPCA in accordance with the monitoring plan. The monitoring plan may be reviewed annually by the MPCA Environmental Data Quality Unit and MPCA may request amendments to the air monitoring plan after review.

<u>Lead</u>
MPCA's ambient monitoring staff conducted an analysis of ambient air measurements during the period between September 18, 2019, and January 29, 2022, and concluded the MPCA operated lead monitoring

sites may be removed. The Agency further concluded the facility may demonstrate compliance with the lead NAAQS through either air dispersion modeling or ambient air monitoring described in the MPCA's industrial monitoring process. Once the facility demonstrated compliance with the lead NAAQS through either modeling ~~or monitoring~~, the MPCA lead monitoring sites were deemed redundant and were discontinued. Accordingly, the permit does not require continuation of ambient monitoring for lead.

3.9.2. Discontinuation of VOC ambient air monitoring after permit issuance

In addition to the option for a revised ambient air monitoring plan with reduced requirements, MPCA staff also developed conditions in which the facility may discontinue ambient air monitoring around the facility. These conditions were developed based on EPA's Ambient Air Monitoring Network Assessment Guidance and MPCA's Development of an air quality monitor siting plan for determination of compliance best practices. The conditions for discontinuation of t-DCE and VOC ambient monitoring are included in the permit and will be implemented upon review and approval from MPCA. These recommendations include:

1) Two years of ambient air monitoring is conducted after an ambient air monitoring plan is approved by MPCA and implemented after the permit issuance date;
2) There are no violations of the permit or operations shut down within that year;
3) The facility's 1,2-(trans-) Dichloroethylene emissions are at least 80 percent of the permitted limit during the ambient air monitoring period or less than 50 percent of the permitted limit; and
4) The probability of future long-term average 1,2-(trans-) Dichloroethylene concentrations being above health guidelines is less than 5 percent.

3.10 Flexibility to modify, replace, or add new battery terminal post coaters

The Permittee wants flexibility to convert VOC coaters to UV coating technology, and the Permittee has asked for flexibility to convert VOC coaters and install more water-based coaters without applying for a major amendment. MPCA supports flexibility for this purpose. Table 8 summarizes the flexibility provided by the permit that would allow and prohibit (without a major amendment) conversion or replacement of existing coaters, or addition of new coaters.

Table 8. Summary of flexibility allowed by the permit

Coating type and application method	YES to convert to OR replace with	NO to convert to OR add coaters	Comment
VOC dip/drip	• Water-based dip/drip • Water-based spray • UV spray	• Larger capacity VOCdip/drip • VOC spray	Modeling accounts for replacement and addition of new UV coaters or other new sources of PM/PM_{10}/$PM_{2.5}$ (i.e. water-based spray). Addition or increase in capacity for VOC coaters, or increase in PM/PM_{10}/$PM_{2.5}$ potential emissions, would need further permit evaluations.
VOC spray	• Water-based dip/drip • Water-based Spray • VOC dip/drip of equal of lower size • VOC spray of equal or lower size • UV spray	• Larger capacity VOC spray • Larger capacity dip/drip VOC	Modeling accounts for replacement and addition of new UV coaters or other new sources of PM/PM_{10}/$PM_{2.5}$ (i.e. water-based spray). Addition or increase in capacity for VOC coaters, or increase in PM/PM_{10}/$PM_{2.5}$ potential emissions, would need further permit evaluations.
Water-based dip/drip	• Water-based spray • Water-based dip/drip	• VOC dip/drip • VOC spray	Modeling accounts for replacement and addition of new UV coaters or other new

Commented [A63]: MPCA already has ample data.

Commented [A64]: Vague requirement – what constitutes a violation of the permit? Any deviation? Disingenuous condition when the permit includes a condition to correlate tracked usage with the in-stack monitor, set at a correlation to show deviations 5% of the time.

Commented [A65]: It is counterintuitive and counterproductive to require a high level of usage emissions in order to discontinue monitoring, when the facility has stated its long-term plans to increase UV coating and reduce solvent coating. The trigger for discontinuing ambient monitoring should be tied to reduced VOC-based coating usage. It is illogical to encourage high usage rather than low usage as the company moves away from VOC-based coating.

Commented [A66]: See petition for contested case hearing and comment letter.

Commented [A67]: There are no PM emissions from dip/drip coaters, so converting VOC spray to a larger capacity VOC dip/drip coater should be allowed.

	• UV spray		sources of PM/PM_{10}/$PM_{2.5}$ (i.e. water-based spray). Addition or increase in capacity for VOC coaters, or increase in PM/PM_{10}/$PM_{2.5}$ potential emissions, would need further permit evaluations.
Water-based spray	• Water-based dip/drip • ~~Water-based spray~~ • UV spray	• VOC dip/drip • VOC spray	Modeling accounts for replacement and addition of new UV coaters or other new sources of PM/PM10/PM2.5 (i.e. water-based spray). Addition or increase in capacity for VOC coaters, or increase in PM/PM_{10}/$PM_{2.5}$ potential emissions, would need further permit evaluations.
UV spray	• Water-based dip/drip • Water-based spray • UV spray	• VOC dip/drip • VOC spray	Modeling accounts for replacement and addition of new UV coaters or other new sources of PM/PM_{10}/$PM_{2.5}$ (i.e. water-based spray). Addition or increase in capacity for VOC coaters, or increase in PM/PM_{10}/$PM_{2.5}$ potential emissions, would need further permit evaluations.

Appendix B to the permit contains an inventory of the coating type and application method allowed at the time of permit issuance. The permit requires that the inventory be updated whenever coater is modified, added, or replaced as allowed by the permit.

3.11 Monitoring

In accordance with the Clean Air Act, it is the responsibility of the owner or operator of a facility to have sufficient knowledge of the facility to certify that the facility is in compliance with all applicable requirements.

In evaluating the monitoring included in the permit, the MPCA considered the following:

- The likelihood of the facility violating the applicable requirements.
- Whether add-on controls are necessary to meet the emission limits.
- The variability of emissions over time.
- The type of monitoring, process, maintenance, or control equipment data already available for the emission unit.
- The technical and economic feasibility of possible periodic monitoring methods.
- The kind of monitoring found on similar units elsewhere.

The table below summarizes the monitoring requirements associated with this amendment.

Table 9. Monitoring

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
COMG 1 (VOC and 1,2 (trans) Dichloroethylene Limits and VOC Coater, Water-Based Coater, UV Coater, and Solvent Distillation Operation Requirements)	VOC <= 90.0 tons/yr 12-month rolling sum [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and 40 CFR 70.2]	Recordkeeping: Daily records of coating usage; purchase records of solvent; on-going records of coating contents; monthly calculations of emissions; continuous emissions monitoring; ambient monitoring	Records can be generated on a daily basis with a combination of daily usage logs, and calculation of monthly emissions and 12-month rolling sums. Material content for each material must be determined as required by the Material Content requirement at COMG 1. CEMS will ensure reliability of recordkeeping of usage in the coating rooms and ambient monitoring will provide information on the concurrence with emissions trends to ensure the t-DCE HBV is not exceeded. Credit can be taken for waste materials collected and shipped off-site (usage - waste = emissions).
	1,2-(trans) Dichloroethylene <= 32.6 tons/yr 365-day rolling sum [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]	Recordkeeping: Daily records of t-DCE coating usage; t-DCE containing material recovered from the distiller and exiting the facility in waste; on-going records of t-DCE content in coatings, used solvent and waste; daily calculations of emissions; Continuous emissions monitoring; ambient monitoring. Quarterly t-DCE purchase and inventory audit	Records can be generated on a daily basis with a combination of daily usage logs, and calculations of daily emissions and 365-day rolling sums. Material content for each material must be determined as required by the Material Content requirement at COMG 1. CEMS will ensure reliability of recordkeeping of VOC usage in the coating rooms and ambient monitoring will provide information on the concurrence with emissions trends and ensure the t-DCE HBV is not exceeded. Credit can be taken for waste materials collected and shipped off-site (usage - waste = emissions).
COMG 5 (Coating Room Requirements)	Pressure Drop <= -0.007" H_2O [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]	Recordkeeping: CPMS; alarms; performance testing	Continuous Parameter Monitoring System (CPMS) will continuously monitor pressure drop across each entrance, each with an alarm that sounds when pressure drop is above the set point.

Commented [A68]: See petition for contested case hearing and comment letter.

Commented [A69]: See prior discussion regarding CEMS.

Commented [A70]: Setting requirements from a NESHAP the facility is not subject to is unnecessarily burdensome.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
COMG 6 (Indirect Heating Equipment Rule Requirements)	PM <= 0.40 lb/MMBtu Opacity <= 20.0% [Minn. R. 7011.0515]	Recordkeeping: monthly fuel records	All units use natural gas; therefore, the likelihood of violating either of the emission limits is very small. The Permittee can demonstrate that these units will continue to operate such that emissions are well below the emission limits by only burning natural gas. Design based PTE for each unit, using AP-42, is 0.0075 lb/MMBtu of PM compared to the rule limit of 0.4 lb/MMBtu of PM.
COMG 7 (Industrial Process Equipment Rule Requirements)	PM <= 0.30 gr/dscf Opacity <= 20% [Minn. R. 7011.0715]	None	Applicable rule limits are above calculated potential to emit based on maximum throughput and airflow.
COMG 10 (NOx: North Building Space Heating and Operation Limits)	Heat Input <= 10.~~68~~ 69 MMBtu [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]	Heating unit inventory and recordkeeping	The permit requires the facility to keep an up-to-date inventory of all space heating units. These records must be available for MPCA inspection.
	PM < 10 micron <= 0.07966 pounds per hour 3-hour average PM < 2.5 micron <= 0.07966 pounds per hour 3-hour average Nitrogen Oxides <= 1.0482 pounds per hour 3-hour average Lead <= 0.000005 pounds per hour 3-hour average [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]	None	Emissions from units in COMG 10 were modeled at their maximum capacity. No further monitoring is required.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
COMG 11 (HEPA Filter and Electrostatic Precipitator Control Equipment Train - Melt Pots)	PM >= 97.0 percent control efficiency PM10 >= 97.0 percent control efficiency PM2.5 >= 97.0 percent control efficiency Lead >= 86.0 percent control efficiency [Avoid a major source under Part 70.2, Minn. R. 7007.0800, subp. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]	Daily and periodic inspections, operation and maintenance, corrective actions, performance testing, and recordkeeping.	Monitoring based on the Minnesota Performance Standard for Control Equipment is adequate to have a reasonable assurance of compliance.
COMG 12 (HEPA Filter and Electrostatic Precipitator Control Equipment Train – Die Casting)	PM >= 86.6 percent control efficiency PM10 >= 86.6 percent control efficiency PM2.5 >= 86.6 percent control efficiency [Avoid a major source under Part 70.2, Minn. R. 7007.0800, subp. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]	Daily and periodic inspections, operation and maintenance, corrective actions, performance testing, and recordkeeping.	Monitoring based on the Minnesota Performance Standard for Control Equipment is adequate to have a reasonable assurance of compliance.
COMG 13 (Direct Heating Equipment Rule Requirements)	PM <= 0.30 gr/dscf Opacity <= 20% [Minn. R. 7011.0610, subps. 1(A)(1) & (2)]	Recordkeeping: fuel records	These units use natural gas only; therefore, the likelihood of violating either of the emission limits is very small. The Permittee can demonstrate that these units will continue to operate such that emissions are well below the emission limits by only burning natural gas.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
COMG 14 (HEPA Filters – Spray Coaters)	PM >= 99.98% control efficiency PM < 10 micron >= 99.98% control efficiency PM < 2.5 micron >= 99.90% control efficiency [Avoid a major source under Part 70.2, Minn. R. 7007.0800, subp. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]	Daily recordkeeping, O & M, periodic inspections	Monitoring based on the Minnesota Performance Standard for Control Equipment is adequate to have a reasonable assurance of compliance.
COMG 15 (NOx: South Building Space Heating and Operation Limits)	Heat Input <= 2.~~18~~ 29 MMBtu (South Building) [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]	Heating unit inventory and recordkeeping	The permit requires the facility to keep an up-to-date inventory of all space heating units. These records must be available for MPCA inspection.
	PM < 10 micron <= 0.0171 pounds per hour 3-hour average PM < 2.5 micron <= 0.0171 pounds per hour 3-hour average Nitrogen Oxides <= 0.2248 pounds per hour 3-hour average Lead <= 0.000001 pounds per hour 3-hour average [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]	None	Emissions from units in COMG 15 were modeled at their maximum capacity. No further monitoring is required.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
COMG 16 (Die Casting Annual Throughput and Lead Emission Limits)	Process Throughput <= 39,355.50 tons per year 365-day rolling sum Captured Lead <= 48.21 pounds per year 365-day rolling sum Uncaptured Lead <= 8.46 pounds per year 365-day rolling sum [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.
EQUI 101 (CF Scrap Re-Melt Pot)	Process Throughput <= 2,180 lb/hr daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.
EQUI 102 (Small Re-Melt Pot)	Process Throughput <= 1,000.0 lb/hr daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
EQUI 103 (Doe Run Melt Pot)	Process Throughput <= 240.0 lb/hr daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.
EQUI 104 (CF Re-Melt Pot)	Process Throughput <= 4,000.0 lb/hr daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.
EQUI 120 (Emergency Generator)	NMHC+NOx <= 4.7 g/kW-hr PM <= 0.40 g/kW-hr CO <= 5.0 g/kW-hr Opacity <= 15% Opacity <= 20% Opacity <= 50% Sulfur Content <= 15.0 ppm [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), Minn. R. 7011.2305]	Fuel Supplier Certification for each shipment of diesel fuel; non-resettable hour meter, and recordkeeping.	Monitoring required by the NSPS is adequate to demonstrate compliance with the requirements.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
	Opacity <= 20% SO_2 <= 0.0015 lb/MMBtu [Minn. R. 7011.2300]		
EQUI 121 (DC09)	Process Throughput <= 290.53 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.
EQUI 122 (DC12)	Process Throughput <= 872.10 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.
EQUI 123 (DC33)	Process Throughput <= 401.24 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
EQUI 124 (DC14)	Process Throughput <= 500.01 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.
EQUI 125 (DC15)	Process Throughput <= 233.75 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.
EQUI 126 (DC21)	Process Throughput <= 530.77 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
EQUI 127 (DC08)	Process Throughput <= 129.56 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.
EQUI 128 (DC10)	Process Throughput <= 399.71 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.
EQUI 129 (DC17)	Process Throughput <= 220.83 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
EQUI 130 (DC18)	Process Throughput <= 204.30 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.
EQUI 131 (DC36)	Process Throughput <= 634.27 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.
EQUI 132 (DC37)	Process Throughput <= 552.50 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
EQUI 133 (DC25)	Process Throughput <= 462.53 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.
EQUI 134 (DC22)	Process Throughput <= 452.85 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.
EQUI 135 (DC35)	Process Throughput <= 893.96 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
EQUI 136 (DC32)	Process Throughput <= 893.96 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.
EQUI 137 (DC26)	Process Throughput <= 330.59 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.
EQUI 138 (DC27)	Process Throughput <= 555.28 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
EQUI 139 (DC16)	Process Throughput <= 596.70 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.
EQUI 140 (DC28)	Process Throughput <= 465.62 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.
EQUI 141 (DC29)	Process Throughput <= 740.14 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
EQUI 142 (DC19)	Process Throughput <= 555.90 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.
EQUI 143 (DC34)	Process Throughput <= 462.53 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.
EQUI 146 (DC42)	Process Throughput <= 1199.66 lb/hr daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
EQUI 147 (DC38)	Process Throughput <= 1199.66 lb/hr daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.
EQUI 149 (DC40)	Process Throughput <= 596.70 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.
EQUI 150 (DC48)	Process Throughput <= 613.11 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
EQUI 152 (DC41)	Process Throughput <= 1305.27 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.
EQUI 153 (DC44)	Process Throughput <= 1179.85 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.
EQUI 154 (DC45)	Process Throughput <= 1132.90 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
EQUI 155 (DC52)	Process Throughput <= 462.53 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.
EQUI 156 (DC50)	Process Throughput <= 855.22 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.
EQUI 157 (DC51)	Process Throughput <= 1305.27 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
EQUI 158 (DC53)	Process Throughput <= 1233.40 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.
EQUI 160 (Billet Saw)	Process Throughput <= 1000.0 pounds per hour daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping, calculations, and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.
EQUI 221 (Tin Melt Pot)	Process Throughput <= 2500.0 lb/hr daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily recordkeeping of process throughput; daily calculations	Daily usage recordkeeping and performance testing to verify and reset emission factors used in calculations will provide reasonable assurance that the process limit and emission limit will not be exceeded.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
STRU 1 (Smog Hog #15 Stack)	PM < 10 <= 0.1012 lb/hr daily average PM < 2.5 <= 0.1012 lb/hr daily average Lead <= 0.00297 lb/day 92-day rolling average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping; performance testing	Emissions from several units discharge to this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$, and 92 rolling average limits for lead. Daily calculations, recordkeeping, and performance testing will provide reasonable assurance that the limit will not be exceeded.
STRU 15 (Smog Hog #1 Stack)	PM < 10 micron <= 0.03887 lb/hr daily average PM < 2.5 <= 0.03887 lb/hr daily average Lead <= 0.0230 lb/day 92-day rolling average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping; performance testing	Emissions from several units discharge to this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$, and 92 rolling average limits for lead. Daily calculations, recordkeeping, and performance testing will provide reasonable assurance that the limit will not be exceeded.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
STRU 16 (Smog Hog #2 Stack)	PM < 10 <= 0.06388 lb/hr daily average PM < 2.5 <= 0.06388 lb/hr daily average Lead <= 0.03778 lb/day 92-day rolling average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping; performance testing	Emissions from several units discharge to this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$, and 92 rolling average limits for lead. Daily calculations, recordkeeping, and performance testing will provide reasonable assurance that the limit will not be exceeded.
STRU 17 (Smog Hog #3 Stack)	PM < 10 <= 0. 01864 lb/hr daily average PM < 2.5 <= 0. 01864 lb/hr daily average Lead <= 0. 01103 lb/day 92-day rolling average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping; performance testing	Emissions from several units discharge to this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$, and 92 rolling average limits for lead. Daily calculations, recordkeeping, and performance testing will provide reasonable assurance that the limit will not be exceeded.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
STRU 20 (Smog Hog #6 Stack)	PM < 10 <= 0.02523 lb/hr daily average PM < 2.5 <= 0.02523 lb/hr daily average Lead <= 0. 01492 lb/day 92-day rolling average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping; performance testing	Emissions from several units discharge to this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$, and 92 rolling average limits for lead. Daily calculations, recordkeeping, and performance testing will provide reasonable assurance that the limit will not be exceeded.
STRU 23 (Smog Hog #9 Stack)	PM < 10 <= 0.02222 lb/hr daily average PM < 2.5 <= 0.02222 lb/hr daily average Lead <= 0. 01314 lb/day 92-day rolling average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping; performance testing	Emissions from several units discharge to this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$, and 92 rolling average limits for lead. Daily calculations, recordkeeping, and performance testing will provide reasonable assurance that the limit will not be exceeded.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
STRU 24 (Smog Hog #10 Stack)	PM < 10 <= 0.02202 lb/hr daily average PM < 2.5 <= 0.02202 lb/hr daily average Lead <= 0.01302 lb/day 92-day rolling average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping; performance testing	Emissions from several units discharge to this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$, and 92 rolling average limits for lead. Daily calculations, recordkeeping, and performance testing will provide reasonable assurance that the limit will not be exceeded.
STRU 25 (Smog Hog #11 Stack)	PM < 10 <= 0.02641 lb/hr daily average PM < 2.5 <= 0.02641 lb/hr daily average Lead <= 0.01562 lb/day 92-day rolling average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping; performance testing	Emissions from several units discharge to this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$, and 92 rolling average limits for lead. Daily calculations, recordkeeping, and performance testing will provide reasonable assurance that the limit will not be exceeded.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
STRU 26 (Smog Hog #12 Stack)	PM < 10 <= 0.05521 lb/hr daily average PM < 2.5 <= 0.05521 lb/hr daily average Lead <= 0.03265 lb/day 92-day rolling average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping; performance testing	Emissions from several units discharge to this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$, and 92 rolling average limits for lead. Daily calculations, recordkeeping, and performance testing will provide reasonable assurance that the limit will not be exceeded.
STRU 30 (Smog Hog #16 Stack)	PM < 10 <= 0.06048 lb/hr daily average PM < 2.5 <= 0.06048 lb/hr daily average Lead <= 0. 03577 lb/day 92-day rolling average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping; performance testing	Emissions from several units discharge to this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$, and 92 rolling average limits for lead. Daily calculations, recordkeeping, and performance testing will provide reasonable assurance that the limit will not be exceeded.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
STRU 31 (Smog Hog #17 Stack)	PM < 10 <= 0. 02982 lb/hr daily average PM < 2.5 <= 0.02982 lb/hr daily average Lead <= 0.01764 lb/day 92-day rolling average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping; performance testing	Emissions from several units discharge to this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$, and 92 rolling average limits for lead. Daily calculations, recordkeeping, and performance testing will provide reasonable assurance that the limit will not be exceeded.
STRU 32 (Smog Hog #18 Stack)	PM < 10 <= 0.03007 lb/hr daily average PM < 2.5 <= 0.03007 lb/hr daily average Lead <= 0.01788 lb/day 92-day rolling average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping; performance testing	Emissions from several units discharge to this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$, and 92 rolling average limits for lead. Daily calculations, recordkeeping, and performance testing will provide reasonable assurance that the limit will not be exceeded.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
STRU 33 (Smog Hog #19 Stack)	PM < 10 <= 0.05370 lb/hr daily average PM < 2.5 <= 0.05370 lb/hr daily average Lead <= 0.03176 lb/day 92-day rolling average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping; performance testing	Emissions from several units discharge to this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$, and 92 rolling average limits for lead. Daily calculations, recordkeeping, and performance testing will provide reasonable assurance that the limit will not be exceeded.
STRU 34 (Smog Hog #20 Stack)	PM < 10 <= 0.05749 lb/hr daily average PM < 2.5 <= 0.05749 lb/hr daily average Lead <= 0.03400 lb/day 92-day rolling average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping; performance testing	Emissions from several units discharge to this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$, and 92 rolling average limits for lead. Daily calculations, recordkeeping, and performance testing will provide reasonable assurance that the limit will not be exceeded.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
STRU 35 (Smog Hog #21 Stack)	PM < 10 <= 0.01710 lb/hr daily average PM < 2.5 <= 0.01710 lb/hr daily average Lead <= 0.01059 lb/day 92-day rolling average Lead <= 0.9412 lb/yr 365-day rolling sum [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping; performance testing	Emissions from EQUI 160 (billet saw) and EQUI 117 (R&D UV coater) discharge to the room and the room emissions are vented through this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$, and 92 rolling average limits for lead. Daily calculations and recordkeeping will provide reasonable assurance that the limit will not be exceeded. EQUI 160 only runs a maximum of 20 tons throughput in an entire quarter and a few hours per week. EQUI 117 is only used occasionally for R&D purposes. Performance testing would entail long particulate runs (8 hours each, because of the very low estimated concentrations), which would amount to greater run-time for testing purposes than either unit's typical runtime in a given week. Emission factors for billet saw were based on AP-42 factors and test data for UV coaters was used to determine emission factors for EQUI 117.
STRU 41	1, 2 (trans-) Dichloroethylene <= 0.0010 lb/hr based on a 3-hour average Trichloroethylene <= 0.00006 lb/hr based on a 3-hour average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]	Sampling and analysis of influent and effluent concentrations. Operation of the solvent vapor remediation system, inspections and corrective actions.	The emission limits at the stack represent the modeled emission rates. AERA conducted with these emission rates showed compliance with health benchmarks. These emissions represent asymptotic levels of emissions from the solvent vapor remediation system. The MPCA Remediation Division is overseeing the operation of this system and the control equipment will remain in operation until removal is approved by the MPCA Remediation Division.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
STRU 43 (North Building Vent 7)	PM < 10 <= 0.01896 lb/hr daily average PM < 2.5 <= 0.01896 lb/hr daily average Lead <= 0.01488 lb/day 92-day rolling average NOx <= 0.1826 pounds per hour 1-hour average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping;	Emissions from several units discharge to this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$, and 92 rolling average limits for lead. Daily calculations and recordkeeping. A conservative amount of uncaptured emissions are assumed to be vented through to this stack. The captured emissions from the associated stack will be tested and this will provide reasonable assurance that the limit will not be exceeded. NOx is the emission rate used in modeling and it represents the contributions from makeup air units EQUI 106 and 109, since the combustion emissions were calculated at capacity, no other conditions is required to assure compliance with the emission limit.
STRU 44 (North Building Vent 1)	PM < 10 <= 0.07081 lb/hr daily average PM < 2.5 <= 0.07081 lb/hr daily average Lead <= 0.01061 lb/day 92-day rolling average NOx <= 0.4070 pounds per hour 1-hour average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping;	Emissions from several units discharge to this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$, and 92 rolling average limits for lead. Daily calculations and recordkeeping. A conservative amount of uncaptured emissions are assumed to be vented through to this stack. The captured emissions from the associated stack will be tested and this will provide reasonable assurance that the limit will not be exceeded. NOx is the emission rate used in modeling and it represents the contributions from makeup air units EQUI 107, 108, and 111, since the combustion emissions were calculated at capacity, no other conditions is required to assure compliance with the emission limit.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
STRU 45 (North Building Vent 2)	PM < 10 <= 0.05712 lb/hr daily average PM < 2.5 <= 0.05712 lb/hr daily average Lead <= 0.006982 lb/day 92-day rolling average NOx <= 0.4070 pounds per hour 1-hour average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping	Emissions from several units discharge to this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$, and 92 rolling average limits for lead. Daily calculations and recordkeeping. A conservative amount of uncaptured emissions are assumed to be vented through to this stack. The captured emissions from the associated stack will be tested and this will provide reasonable assurance that the limit will not be exceeded. NOx is the emission rate used in modeling and it represents the contributions from makeup air units EQUI 107, 108, and 111, since the combustion emissions were calculated at capacity, no other conditions is required to assure compliance with the emission limit.
STRU 46 (North Building Vent 3)	PM < 10 <= 0.04535 lb/hr daily average PM < 2.5 <= 0.04535 lb/hr daily average Lead <= 0.003868 lb/day 92-day rolling average NOx <= 0.4070 pounds per hour 1-hour average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping	Emissions from several units discharge to this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$, and 92 rolling average limits for lead. Daily calculations and recordkeeping. A conservative amount of uncaptured emissions are assumed to be vented through to this stack. The captured emissions from the associated stack will be tested and this will provide reasonable assurance that the limit will not be exceeded. NOx is the emission rate used in modeling and it represents the contributions from makeup air units EQUI 107, 108, and 111, since the combustion emissions were calculated at capacity, no other conditions is required to assure compliance with the emission limit.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
STRU 47 (North Building Vent 4)	PM < 10 <= 0.02241 lb/hr daily average PM < 2.5 <= 0.02241 lb/hr daily average Lead <= 0.001958 lb/day 92-day rolling average NOx <= 0.1987 pounds per hour 1-hour average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping	Emissions from several units discharge to this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$, and 92 rolling average limits for lead. Daily calculations and recordkeeping. A conservative amount of uncaptured emissions are assumed to be vented through to this stack. The captured emissions from the associated stack will be tested and this will provide reasonable assurance that the limit will not be exceeded. NOx is the emission rate used in modeling and it represents the contributions from makeup air units EQUI 106 and 108, since the combustion emissions were calculated at capacity, no other conditions is required to assure compliance with the emission limit.
STRU 48 (North Building Vent 5)	PM < 10 <= 0.02520 lb/hr daily average PM < 2.5 <= 0.02520 lb/hr daily average Lead <= 0.003020 lb/day 92-day rolling average NOx <= 0.1826 pounds per hour 1-hour average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping	Daily calculations and recordkeeping. A conservative amount of uncaptured emissions are assumed to be vented through to this stack. The captured emissions from the associated stack will be tested and this will provide reasonable assurance that the limit will not be exceeded. NOx is the emission rate used in modeling and it represents the contributions from Make-up Air units EQUI 106 and 109, since the combustion emissions were calculated at capacity, no other conditions is required to assure compliance with the emission limit.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
STRU 49 (North Building Vent 6)	PM < 10 <= 0.01779 lb/hr daily average PM < 2.5 <= 0.01779 lb/hr daily average Lead <= 0.001057 lb/day 92-day rolling average NOx <= 0.1823 pounds per hour 1-hour average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping	Emissions from several units discharge to this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$, and 92 rolling average limits for lead. Daily calculations and recordkeeping. A conservative amount of uncaptured emissions are assumed to be vented through to this stack. The captured emissions from the associated stack will be tested and this will provide reasonable assurance that the limit will not be exceeded. NOx is the emission rate used in modeling and it represents the contributions from makeup air units EQUI 106 and 109, since the combustion emissions were calculated at capacity, no other conditions is required to assure compliance with the emission limit.
STRU 50 (North Building Vent 8)	PM < 10 <= 0.01688 lb/hr daily average PM < 2.5 <= 0.01688 lb/hr daily average Lead <= 0.002092 lb/day 92-day rolling average NOx <= 0.1213 pounds per hour 1-hour average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping	Emissions from several units discharge to this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$, and 92 rolling average limits for lead. Daily calculations and recordkeeping. A conservative amount of uncaptured emissions are assumed to be vented through to this stack. The captured emissions from the associated stack will be tested and this will provide reasonable assurance that the limit will not be exceeded. NOx is the emission rate used in modeling and it represents the contributions from makeup air units EQUI 109, since the combustion emissions were calculated at capacity, no other conditions is required to assure compliance with the emission limit.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
STRU 51 (North Building Vent 9)	PM < 10 <= 0.05654 lb/hr daily average PM < 2.5 <= 0.05654 lb/hr daily average Lead <= 0.01006 lb/day 92-day rolling average NOx <= 0.2453 pounds per hour 1-hour average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping	Emissions from several units discharge to this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$, and 92 rolling average limits for lead. Daily calculations and recordkeeping. A conservative amount of uncaptured emissions are assumed to be vented through to this stack. The captured emissions from the associated stack will be tested and this will provide reasonable assurance that the limit will not be exceeded. NOx is the emission rate used in modeling and it represents the contributions from makeup air units EQUI 110 and 112, since the combustion emissions were calculated at capacity, no other conditions is required to assure compliance with the emission limit.
STRU 52 (North Building Vent 10)	PM < 10 <= 0.04234 lb/hr daily average PM < 2.5 <= 0.04234 lb/hr daily average Lead <= 0.006304 lb/day 92-day rolling average NOx <= 0.2453 pounds per hour 1-hour average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping	Emissions from several units discharge to this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$, and 92 rolling average limits for lead. Daily calculations and recordkeeping. A conservative amount of uncaptured emissions are assumed to be vented through to this stack. The captured emissions from the associated stack will be tested and this will provide reasonable assurance that the limit will not be exceeded. NOx is the emission rate used in modeling and it represents the contributions from makeup air units EQUI 110 and 112, since the combustion emissions were calculated at capacity, no other conditions is required to assure compliance with the emission limit.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
STRU 53 (North Building Vent 11)	PM < 10 <= 0.03630 lb/hr daily average PM < 2.5 <= 0.03630 lb/hr daily average Lead <= 0.004705 lb/day 92-day rolling average NOx <= 0.2453 pounds per hour 1-hour average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping	Emissions from several units discharge to this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$, and 92 rolling average limits for lead. Daily calculations and recordkeeping. A conservative amount of uncaptured emissions are assumed to be vented through to this stack. The captured emissions from the associated stack will be tested and this will provide reasonable assurance that the limit will not be exceeded. NOx is the emission rate used in modeling and it represents the contributions from makeup air units EQUI 110 and 112, since the combustion emissions were calculated at capacity, no other conditions is required to assure compliance with the emission limit.
STRU 56 (North Building Vent 14)	PM < 10 <= 0.0429 lb/hr daily average PM < 2.5 <= 0.0429 lb/hr daily average Lead <= 0.00644 lb/day 92-day rolling average NOx <= 0.2453 pounds per hour 1-hour average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping	Emissions from several units discharge to this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$, and 92 rolling average limits for lead. Daily calculations and recordkeeping. A conservative amount of uncaptured emissions are assumed to be vented through to this stack. The captured emissions from the associated stack will be tested and this will provide reasonable assurance that the limit will not be exceeded. NOx is the emission rate used in modeling and it represents the contributions from makeup air units EQUI 110 and 112, since the combustion emissions were calculated at capacity, no other conditions is required to assure compliance with the emission limit.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
STRU 57 (North Building Vent 20)	PM < 10 <= 0.00109 lb/hr based on 3-hour average PM < 2.5 <= 0.00109 lb/hr based on 3-hour average Lead <= 0.00002 lb/hr based on 3-hour average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Performance testing	The emission limits at the stack represent the modeled emission rates at design capacity and with operation of controlled equipment, therefore process record keeping and calculations are not needed. The performance test will verify controlled emission rates based on emission factors and assumed control efficiencies provided with permit application.
STRU 72 (Fume Hood Vent)	PM < 10 <= 0.006336 lb/hr daily average PM < 2.5 <= 0.006336 lb/hr daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping	The emission limits at the stack represent the emission rates at design capacity. The modeling results show higher emission rates as a conservative approach. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$. Daily calculations and recordkeeping.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
STRU 73 (Battery Terminal Post Coater Stack)	PM < 10 <= 0.01012 lb/hr daily average PM < 2.5 <= 0.01012 lb/hr daily average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping; performance testing	Emissions from several units discharge to this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$. Daily calculations, recordkeeping and performance testing will provide reasonable assurance that the limit will not be exceeded
STRU 74 (Smog Hog #5 Stack)	PM < 10 <= 0.02084 lb/hr daily average PM < 2.5 <= 0.02084 lb/hr daily average Lead <= 0.01233 lb/day 92-day rolling average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping; performance testing	Emissions from several units discharge to this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$, 92 rolling average limits for lead and 365 rolling sums limits for lead. Daily calculations, recordkeeping, and performance testing will provide reasonable assurance that the limit will not be exceeded.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
STRU 75 (Smog Hog #8 Stack)	PM < 10 <= 0.03348 lb/hr daily average PM < 2.5 <= 0.03348 lb/hr daily average Lead <= 0.01980 lb/day 92-day rolling average [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]	Daily emissions calculations and recordkeeping; performance testing	Emissions from several units discharge to this stack. The emission limits at the stack represent the modeled emission rates. PM_{10} and $PM_{2.5}$ are 24-hour standards and the daily process rates will be used to show compliance with daily limits for PM_{10}, $PM_{2.5}$, 92 rolling average limits for lead and 365 rolling sums limits for lead. Daily calculations, recordkeeping, and performance testing will provide reasonable assurance that the limit will not be exceeded.
TREA 1 (Smog Hog #15) TREA 25 (Smog Hog #1) TREA 26 (Smog Hog #2) TREA 27 (Smog Hog #3) TREA 30 (Smog Hog #6) TREA 33 (Smog Hog #9) TREA 34 (Smog Hog #10) TREA 35 (Smog Hog #11) TREA 36 (Smog Hog #12) TREA 39 (Smog Hog #16) TREA 40 (Smog Hog #17) TREA 41 (Smog Hog #18) TREA 42 (Smog Hog #19) TREA 43 (Smog Hog	Avoid major source under 40 CFR 70.2, Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)	Data collection: continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times	The continuous records will ensure the control equipment is operating when the emission units are operating, and will provide reasonable assurance that the emission limits will not be exceeded.

Subject item*	Requirement (rule basis)	What is the monitoring	Why is this monitoring adequate?
#20) TREA 78 (Smog Hog #5) TREA 79 (Smog Hog #8)			
TREA 60 (Nederman Filter 15N - STRU 1) TREA 61 (Nederman Filter 1N - STRU 15) TREA 62 (Nederman Filter 2N1 - STRU 16) TREA 63 (Nederman Filter 2N2 - STRU 16) TREA 64 (Nederman Filter 3N - STRU 17) TREA 65 (Nederman Filter 4N - STRU 74) TREA 66 (Nederman Filter 6N - STRU 20) TREA 67 (Nederman Filter 7N – STRU 75) TREA 68 (Nederman Filter 9N - STRU 23) TREA 69 (Nederman Filter 10N - STRU 24) TREA 70 (Nederman Filter 11N - STRU 25) TREA 71 (Nederman Filter 12N1 - STRU 26) TREA 72 (Nederman Filter 12N2 - STRU 26) TREA 73 (Nederman Filter 16N - STRU 30) TREA 74 (Nederman Filter 17N - STRU 31) TREA 75 (Nederman Filter 18N - STRU 32) TREA 76 (Nederman Filter 19N - STRU 33) TREA 77 (Nederman Filter 20N - STRU 34)	Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]	Daily pressure drop recordkeeping, O & M, periodic inspections, performance testing	Monitoring based on the Minnesota Performance Standard for Control Equipment is adequate to have a reasonable assurance of compliance.

*Location of the requirement in the permit (e.g., EQUI 1, STRU 2, etc.).

3.12 Insignificant activities

Water Gremlin Co has several operations which are classified as insignificant activities under the MPCA's permitting rules. These are listed in Appendix A to the permit. The following insignificant activities are included in this modification.

Table 10. Insignificant activities

Insignificant activity	General applicable emission limit	Discussion
Brazing, soldering, torch-cutting, or welding equipment	PM, variable depending on airflow Opacity <= 20% (Minn. R. 7011.0715)	For these units, based on EPA published emissions factors, it is highly unlikely that they could violate the applicable requirement. In addition, these units are typically operated and vented inside a building, so testing for PM or opacity is not feasible. (Welding)
Individual units with potential emissions less than 2000 lb/year of certain pollutants	PM, variable depending on airflow Opacity <= 20% (Minn. R. 7011.0715)	For these units, based on EPA published emissions factors, it is highly unlikely that they could violate the applicable requirement. In addition, these units are typically operated and vented inside a building, so testing for PM or opacity is not feasible. (Parts washer)

3.13 Permit organization

In general, this permit meets the MPCA Tempo Guidance for ordering and grouping of requirements as well as the use of permit appendices. However, federal requirements from NSPS are included in a different format from past permits. For these rules, limits and submittal/actions from 40 CFR pt. 60, subp. IIII are included individually in the permit like the other standards. For the remaining portions of the rule and the associated General Provisions in 40 CFR pt. 60, subp. A, a requirement in Section 5 of the permit lists the citations of all of the applicable parts of the standard along with a reference to the permit appendix where the full text of the standard is included. Copies of each standard written in this format are included in Appendices H and I, respectively.

3.14 Comments received

Public Notice Period: [start date] – [end date]
EPA Review Period: [start date] – [end date]

4. Permit fee assessment

Attachment 3 to this TSD contains the MPCA's assessment of Application and Additional Points used to determine the permit application fee for this permit action as required by Minn. R. 7002.0019. The permit action includes three permit applications, of which include the incorporation of applicable NSPS and NESHAP standards, limits to avoid PSD and Part 70 regulations, NAAQS modeling, and an AERA. Each of these are chargeable activities under the rule and are summarized in Attachment 3.

5. Conclusion

Based on the information provided by Water Gremlin Co the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 12300341-101 and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff members on permit team: Jacobe Timler (permit engineer)
Jeffrey Hedman (peer reviewer)

Megumi Muramoto-Mathieu (permit engineer)
David Brown (risk evaluation and air modeling)
Kristie Ellickson (environmental analysis and outcomes)
Jennifer Carlson (air compliance and enforcement)
Mark Severin (stack testing)
Katie Rinker (environmental data quality)
Michael Smith (environmental data quality supervisor)
Michael Ginsbach (remediation)
Michael Rynders (hazardous waste)
Carolina Schutt (air permitting unit supervisor)
Toni Volkmeier (air permitting unit supervisor)
Steve Pak (air permitting section manager)
Cory Boeck (air compliance section manager)
Timothy Grape (remediation supervisor)
Beckie Olson (permit writing assistant)
Joe Handtman (document coordinator)
Laurie O'Brien (administrative support)

Tempo Activities: Administrative Amendment (IND20160001), Major Amendment (IND20180001), Major Amendment (IND20190001), Notification of Installation of Controls (IND20210001)

Attachments:
1. PTE summary, NAAQS modeling parameters, and Water Gremlin AERA input parameters
1.a. MPCA corrected RASS
2. Subject item inventory and requirements report
3. Points calculator
4. Copy of Administrative Order, signed January 17, 2020
5. Copy of the Stipulation Agreement, executed March 1, 2019
6. Reported Cumulative VOC Emissions from Fluosolv and Highest 365-Rolling Average Ambient Concentrations of t-DCE
7. Correlation of Solvent Usage Versus CEMS Readings at the Stack
8. Minnesota Department of Health Risk Assessment Advice for trans-1, 2-Dichloroethylene
9. Minnesota Department of Health "trans-1,2-dichloroethylene (CAS No. 156-60-5) 2020 Risk Assessment Advice Follow-up"

Attachment 1 – PTE summary, NAAQS modeling parameters, and Water Gremlin AREA input parameters

MINNESOTA POLLUTION CONTROL AGENCY

520 Lafayette Road North
St. Paul, MN 55155-4194

AQDM-02

Air Quality Dispersion Modeling (AQDM) protocol spreadsheet

(Previously AQDMPS-01)

Doc Type: Air Dispersion Modeling

Note: Permit applicants may create their own spreadsheet tabs.

AQ Facility ID number:	12300341
Facility name:	Water Gremlin Company
Facility address:	4400 Otter Lake Road
Facility contact:	Mary Gail Scott

Model Input Key

Parameters	Units	Description
Permit ID		ID given in Permit or contact MPCA permit engineer
AERMOD ID		3-character facility ID plus Stack Vent or POINT source ID used in Modeling (up to 8 characters), e.g. FACSV001
Pollutant		Criteria pollutant modeled, PM2.5, PM10, SO2, NO2, CO, Pb, O3
Averaging time		Modeling Period for pollutant, 1-HR, 24-HR, Annual, etc.
Operating scenario	[#]	A number indicating the operating condition, described in the Emission Calculations tab, for which the emission rate will be modeled.
Scalar/Variable emissions_type		By Season (SEASON); By Month (MONTH); By Hour-of-Day (HROFDY); By Wind Speed (W SPEED); By Season/Hour (SEASHR); By Season/Hour/Day (SHRDOW); By
Release type =		Release type parameter specified on the SO LOCATION card. Use POINT for vertical, POINTCAP for capped, or POINTHOR for horizontal releases.
X and Y	[m]	Stack Coordinates in UTM NAD83, zone 15 extended ONLY
Base_Elev =	[m]	Source base elevation above mean sea level
Emission_Rate =	[g/s]	Emission rate (g/s)
Height =	[m]	Release height above ground
Exit_Temp =	[K]	temperature.
Exit_Vel =	[m/s]	Stack exit velocity. For capped and horizontal releases, this value should be set as if the stack was a non-capped vertical release.
Diam =	[m]	Stack diameter or equivalent diameter
Flow Rate =	[ACFM]	Flow rate of stack
Desc =		Stack description (boiler, furnace, etc)
SO EMISFACT Description		Scalar/Variable emissions description

SRCPARAM

Permit	AERMOD	Pollutant	Averaging time	ating sce	Scalar/Variable emissions_type	Release_Type	X1	Y1	Base_Elev	_Rate	Emission_Rate
ID	ID			#			[m]	[m]	[m]	r]	[g/sec]
EU001	FACSV001	NO2	1-hr	1	SHRDOW	POINTCAP	495,488.980	5,251,009.250	450.31	56	149
EU002	FACSV001	$PM_{2.5}$	24-hr	1		POINT	495,494.980	5,251,011.250	450.31	4	0.005
EU003	FACSV003	$PM_{2.5}$	24-hr	2		POINT	495,499.980	5,251,013.250	450.31		10

Permit	AERMOD	Pollutant	Averaging Time	ating sce	Scalar/Variable emissions_type	Release_Type	Easting X1	Northing Y1	Base_Elev	Emission_Rate	Emission_Rate
ID	ID			#			[m]	[m]	[m]	[lb/hr]	[g/sec]
EQUI82, EQUI84,EQUI85, EQUI87-89,EQUI92-EQUI95, EQUI97-EQUI100, EQUI116, EQUI166, EQUI173, EQUI219, EQUI220, EQUI233	STRU73	PM2.5	24-hour; Annual	1	NA	POINT	497,469.52	4,991,185.04	283.09	1.01E-02	1.28E-03
EQUI101-EQUI104, EQUI221	STRU1	PM2.5	24-hour; Annual	1	NA	POINT	497,515.69	4,991,223.02	283.09	1.0118E-01	1.27E-02
EQUI101, EQUI102, EQUI104	STRU68	PM2.5	24-hour; Annual	1	NA	POINTHOR	497,504.16	4,991,222.33	283.09	1.74E-02	2.20E-03
EQUI103	STRU69	PM2.5	24-hour; Annual	1	NA	POINTCAP	497,511.72	4,991,232.43	283.09	3.73E-03	4.69E-04
EQUI121-EQUI123	STRU15	PM2.5	24-hour; Annual	1	NA	POINT	497,483.54	4,991,254.83	283.09	3.89E-02	4.90E-03
EQUI124-EQUI126, EQUI157	STRU16	PM2.5	24-hour; Annual	1	NA	POINT	497,481.97	4,991,258.10	283.09	6.39E-02	8.05E-03
EQUI127-EQUI129	STRU17	PM2.5	24-hour; Annual	1	NA	POINT	497,482.40	4,991,265.22	283.09	1.86E-02	2.35E-03
EQUI130, EQUI131	STRU74	PM2.5	24-hour; Annual	1	NA	POINT	497,482.33	4,991,280.77	283.09	2.08E-02	2.63E-03
EQUI132, EQUI133	STRU20	PM2.5	24-hour; Annual	1	NA	POINT	497,482.57	4,991,286.34	283.09	2.52E-02	3.18E-03
EQUI134, EQUI135	STRU75	PM2.5	24-hour; Annual	1	NA	POINT	497,468.95	4,991,293.05	283.09	3.35E-02	4.22E-03
EQUI136	STRU23	PM2.5	24-hour; Annual	1	NA	POINT	497,462.23	4,991,293.31	283.09	2.22E-02	2.80E-03
EQUI137, EQUI138	STRU24	PM2.5	24-hour; Annual	1	NA	POINT	497,449.23	4,991,294.27	283.09	2.20E-02	2.77E-03
EQUI139, EQUI140	STRU25	PM2.5	24-hour; Annual	1	NA	POINT	497,428.18	4,991,284.88	283.09	2.64E-02	3.33E-03
EQUI141-EQUI143, EQUI155	STRU26	PM2.5	24-hour; Annual	1	NA	POINT	497,427.99	4,991,275.47	283.09	5.52E-02	6.96E-03
EQUI146, EQUI158	STRU30	PM2.5	24-hour; Annual	1	NA	POINT	497,514.59	4,991,210.69	283.09	6.05E-02	7.62E-03
EQUI147	STRU31	PM2.5	24-hour; Annual	1	NA	POINT	497,513.65	4,991,198.51	283.09	2.98E-02	3.76E-03
EQUI149, EQUI150	STRU32	PM2.5	24-hour; Annual	1	NA	POINT	497,495.07	4,991,190.04	283.09	3.01E-02	3.79E-03
EQUI152, EQUI156	STRU33	PM2.5	24-hour; Annual	1	NA	POINT	497,489.65	4,991,190.16	283.09	5.37E-02	6.77E-03

EQUI153, EQUI154	STRU34	PM2.5	24-hour; Annual	1	NA	POINT	497,482.45	4,991,191.19	283.09	5.75E-02	7.24E-03
EQUI160, EQUI117	STRU35	PM2.5	24-hour; Annual	1	HROFDY	POINT	497,540.87	4,990,864.07	280.55	1.71E-02	2.15E-03

Height	Exit_Temp	Exit_Vel	Diam	Flow rate	Description	SO EMISFACT Description
[m]	[K]	[m/s]	[m]	[ACFM]		
48.77	327.6	15.31	5.77	848,251.219	Hood Exhaust	SHRDOW will be used to represent emissions occuring from 8AM to 7PM Monday-Friday year round and Saturdays from September-November
47.57	327.35	15.31	5.47	762,330.637	Emergency power generator	
46.37	327.1	15.31	5.17	681,008.023	Emergency power generator	

Height	Exit_Temp	Exit_Vel	Diam	Flow rate	Description	SO EMISFACT Description
[m]	[K]	[m/s]	[m]	[ACFM]		
12.192	294.261	20.667	0.660	15,000	SV001 Battery Terminal Post Coater Stack. STRU3 was moved to a new location and became STRU73.	
4.267	327.039	9.080	0.546	4,505	Smog Hog #15 Stack (Natural gas emission vent through STRU68 or STRU69), Tin Melt Pot	
10.820	307.650	2.752	0.889	3,619	Melt Pot Room Vent for EQUI 101, 102, and 104. EQUI 103 can NOT run at the same time as EQUI 102, but is modeled at PTE for conservatism.	
10.912	398.872	6.087	0.203	418	Doe Run Melt Pot (EQUI 103) Natural Gas Emissions. Can NOT run same time as EQUI 102 but is evaluated at PTE for conservatism.	
3.683	312.039	9.080	0.546	4,505	Smog Hog #1 Stack	
3.734	312.039	9.080	0.546	4,505	Smog Hog #2 Stack	
3.708	312.039	7.570	0.546	3,756	Smog Hog #3 Stack	
3.632	312.039	7.570	0.546	3,756	Smog Hog #5 Stack	
3.632	312.039	7.570	0.546	3,756	Smog Hog #6 Stack	
3.683	312.039	7.570	0.546	3,756	Smog Hog #8 Stack	
3.683	312.039	7.570	0.546	3,756	Smog Hog #9 Stack	
3.861	312.039	7.570	0.546	3,756	Smog Hog #10 Stack	
3.759	312.039	7.570	0.546	3,756	Smog Hog #11 Stack	
3.810	312.039	7.570	0.546	3,756	Smog Hog #12 Stack	
5.232	312.039	7.570	0.546	3,756	Smog Hog #16 Stack	
5.182	312.039	7.570	0.546	3,756	Smog Hog #17 Stack	
5.512	312.039	7.570	0.546	3,756	Smog Hog #18 Stack	
5.334	312.039	7.570	0.546	3,756	Smog Hog #19 Stack	
5.232	312.039	7.570	0.546	3,756	Smog Hog #20 Stack	

7.315	294.261	4.040	0.546	2,004	Smog Hog #21, which does not serve as control equipment	Operations are limited to 5 am - 11 pm daily

EQUI174	STRU59	PM2.5	24-hour; Annual	1	NA	POINT	497,507.89	4,991,240.39	283.09	No Particulates	
EQUI146, EQUI150, EQUI172, EQUI110, EQUI112	STRU53	PM2.5	24-hour; Annual	1	NA	POINT	497,505.64	4,991,216.93	283.09	3.63E-02	4.57E-03
EQUI147, EQUI158, EQUI110, EQUI112	STRU52	PM2.5	24-hour; Annual	1	NA	POINT	497,503.83	4,991,197.29	283.09	4.23E-02	5.34E-03
EQUI149, EQUI152, EQUI154, EQUI156, EQUI110, EQUI112	STRU51	PM2.5	24-hour; Annual	1	NA	POINT	497,488.75	4,991,198.93	283.09	5.65E-02	7.12E-03
EQUI153, EQUI157, EQUI110, EQUI112	STRU56	PM2.5	24-hour; Annual	1	NA	POINT	497,483.11	4,991,219.35	283.09	4.29E-02	5.40E-03
EQUI130-EQUI136, EQUI107, EQUI108, EQUI111	STRU44	PM2.5	24-hour; Annual	1	NA	POINT	497,474.10	4,991,285.55	283.09	7.08E-02	8.92E-03
EQUI137-EQUI141, EQUI107, EQUI108, EQUI111	STRU45	PM2.5	24-hour; Annual	1	NA	POINT	497,436.71	4,991,287.76	283.09	5.71E-02	7.20E-03
EQUI142, EQUI143, EQUI155, EQUI107, EQUI108, EQUI111	STRU46	PM2.5	24-hour; Annual	1	NA	POINT	497,436.01	4,991,275.77	283.09	4.54E-02	5.71E-03
EQUI127-EQUI129, EQUI106, EQUI108	STRU47	PM2.5	24-hour; Annual	1	NA	POINT	497,475.70	4,991,257.67	283.09	2.24E-02	2.82E-03
EQUI121, EQUI122, EQUI106, EQUI109	STRU48	PM2.5	24-hour; Annual	1	NA	POINT	497,474.48	4,991,250.50	283.09	2.52E-02	3.18E-03
EQUI123, EQUI106, EQUI109	STRU49	PM2.5	24-hour; Annual	1	NA	POINT	497,473.85	4,991,241.55	283.09	1.78E-02	2.24E-03
EQUI125, EQUI126, EQUI115, EQUI116, EQUI109	STRU50	PM2.5	24-hour; Annual	1	NA	POINT	497,471.27	4,991,218.35	283.09	1.69E-02	2.13E-03
EQUI124, EQUI115, EQUI106, EQUI109	STRU43	PM2.5	24-hour; Annual	1	NA	POINT	497,473.47	4,991,236.42	283.09	1.90E-02	2.39E-03
EQUI113, EQUI114	STRU57	PM2.5	24-hour; Annual	1	NA	POINTHOR	497,458.94	4,991,211.27	283.09	1.09E-03	1.37E-04
FUGI001	CT1	PM2.5	24-hour; Annual	1	NA	POINT	497,506.00	4,991,256.00	283.09	1.13E-03	1.43E-04
FUGI002	CT2	PM2.5	24-hour; Annual	1	NA	POINT	497,513.00	4,991,255.60	283.09	1.13E-03	1.43E-04
FUGI004	CT3	PM2.5	24-hour; Annual	1	NA	POINT	497,521.73	4,991,255.96	283.09	1.13E-03	1.43E-04
EQUI222	STRU70	PM2.5	24-hour; Annual	1	NA	POINTCAP	497,499.20	4,991,225.76	283.09	2.24E-03	2.82E-04
EQUI223-EQUI232	STRU71	PM2.5	24-hour; Annual	1	HROFDY	POINT	497,551.22	4,990,875.54	280.55	3.35E-02	4.22E-03
EQUI240	STRU72	PM2.5	24-hour; Annual	1	HROFDY	POINT	497,511.46	4,990,881.57	280.55	6.34E-03	7.98E-04
EQUI82, EQUI84,EQUI85, EQUI87-89,EQUI92-EQUI95, EQUI97-EQUI100, EQUI116, EQUI166, EQUI173, EQUI219, EQUI220, EQUI233	STRU73	PM10	24-hour	1	NA	POINT	497,469.52	4,991,185.04	283.09	1.01E-02	1.28E-03
EQUI101-EQUI104, EQUI221	STRU1	PM10	24-hour	1	NA	POINT	497,515.69	4,991,223.02	283.09	1.0118E-01	1.27E-02
EQUI101, EQUI102, EQUI104	STRU68	PM10	24-hour	1	NA	POINTHOR	497,504.16	4,991,222.33	283.09	1.74E-02	2.20E-03
EQUI103	STRU69	PM10	24-hour	1	NA	POINTCAP	497,511.72	4,991,232.43	283.09	3.73E-03	4.69E-04
EQUI121-EQUI123	STRU15	PM10	24-hour	1	NA	POINT	497,483.54	4,991,254.83	283.09	3.89E-02	4.90E-03
EQUI124-EQUI126, EQUI157	STRU16	PM10	24-hour	1	NA	POINT	497,481.97	4,991,258.10	283.09	6.39E-02	8.05E-03
EQUI127-EQUI129	STRU17	PM10	24-hour	1	NA	POINT	497,482.40	4,991,265.22	283.09	1.86E-02	2.35E-03
EQUI130, EQUI131	STRU74	PM10	24-hour	1	NA	POINT	497,482.33	4,991,280.77	283.09	2.08E-02	2.63E-03
EQUI132, EQUI133	STRU20	PM10	24-hour	1	NA	POINT	497,482.57	4,991,286.34	283.09	2.52E-02	3.18E-03
EQUI134, EQUI135	STRU75	PM10	24-hour	1	NA	POINT	497,468.95	4,991,293.05	283.09	3.35E-02	4.22E-03
EQUI136	STRU23	PM10	24-hour	1	NA	POINT	497,462.23	4,991,293.31	283.09	2.22E-02	2.80E-03
EQUI137, EQUI138	STRU24	PM10	24-hour	1	NA	POINT	497,449.23	4,991,294.27	283.09	2.20E-02	2.77E-03
EQUI139, EQUI140	STRU25	PM10	24-hour	1	NA	POINT	497,428.18	4,991,284.88	283.09	2.64E-02	3.33E-03
EQUI141-EQUI143, EQUI155	STRU26	PM10	24-hour	1	NA	POINT	497,427.99	4,991,275.47	283.09	5.52E-02	6.96E-03
EQUI146, EQUI158	STRU30	PM10	24-hour	1	NA	POINT	497,514.59	4,991,210.69	283.09	6.05E-02	7.62E-03
EQUI147	STRU31	PM10	24-hour	1	NA	POINT	497,513.65	4,991,198.51	283.09	2.98E-02	3.76E-03
EQUI149, EQUI150	STRU32	PM10	24-hour	1	NA	POINT	497,495.07	4,991,190.04	283.09	3.01E-02	3.79E-03
EQUI152, EQUI156	STRU33	PM10	24-hour	1	NA	POINT	497,489.65	4,991,190.16	283.09	5.37E-02	6.77E-03
EQUI153, EQUI154	STRU34	PM10	24-hour	1	NA	POINT	497,482.45	4,991,191.19	283.09	5.75E-02	7.24E-03
EQUI160, EQUI117	STRU35	PM10	24-hour	1	HROFDY	POINT	497,540.87	4,990,864.07	280.55	1.71E-02	2.15E-03
EQUI174	STRU59	PM10	24-hour	1	NA	POINT	497,507.89	4,991,240.39	283.09	No Particulates	
EQUI146, EQUI150, EQUI172, EQUI110, EQUI112	STRU53	PM10	24-hour	1	NA	POINT	497,505.64	4,991,216.93	283.09	3.63E-02	4.57E-03
EQUI147, EQUI158, EQUI110, EQUI112	STRU52	PM10	24-hour	1	NA	POINT	497,503.83	4,991,197.29	283.09	4.23E-02	5.34E-03
EQUI149, EQUI152, EQUI154, EQUI156, EQUI110, EQUI112	STRU51	PM10	24-hour	1	NA	POINT	497,488.75	4,991,198.93	283.09	5.65E-02	7.12E-03
EQUI153, EQUI157, EQUI110, EQUI112	STRU56	PM10	24-hour	1	NA	POINT	497,483.11	4,991,219.35	283.09	4.29E-02	5.40E-03
EQUI130-EQUI136, EQUI107, EQUI108, EQUI111	STRU44	PM10	24-hour	1	NA	POINT	497,474.10	4,991,285.55	283.09	7.08E-02	8.92E-03
EQUI137-EQUI141, EQUI107, EQUI108, EQUI111	STRU45	PM10	24-hour	1	NA	POINT	497,436.71	4,991,287.76	283.09	5.71E-02	7.20E-03
EQUI142, EQUI143, EQUI155, EQUI107, EQUI108, EQUI111	STRU46	PM10	24-hour	1	NA	POINT	497,436.01	4,991,275.77	283.09	4.54E-02	5.71E-03
EQUI127-EQUI129, EQUI106, EQUI108	STRU47	PM10	24-hour	1	NA	POINT	497,475.70	4,991,257.67	283.09	2.24E-02	2.82E-03
EQUI121, EQUI122, EQUI106, EQUI109	STRU48	PM10	24-hour	1	NA	POINT	497,474.48	4,991,250.50	283.09	2.52E-02	3.18E-03
EQUI123, EQUI106, EQUI109	STRU49	PM10	24-hour	1	NA	POINT	497,473.85	4,991,241.55	283.09	1.78E-02	2.24E-03

EQUI125, EQUI126, EQUI115, EQUI116, EQUI109	STRU50	PM10	24-hour	1	NA	POINT	497,471.27	4,991,218.35	283.09	1.69E-02	2.13E-03
EQUI124, EQUI115, EQUI106, EQUI109	STRU43	PM10	24-hour	1	NA	POINT	497,473.47	4,991,236.42	283.09	1.90E-02	2.39E-03

10.058	294.261	9.665	0.966	15,000	exhaust fan #12	
10.058	294.261	9.665	0.966	15,000	exhaust fan #11	
10.058	294.261	9.665	0.966	15,000	exhaust fan #10	
10.058	294.261	9.665	0.966	15,000	exhaust fan #9	
10.058	294.261	9.665	0.966	15,000	exhaust fan #14	
7.925	294.261	12.412	1.100	25,000	exhaust fan #1	
7.925	294.261	12.412	1.100	25,000	exhaust fan #2	
7.925	294.261	12.412	1.100	25,000	exhaust fan #3	
7.010	294.261	9.665	0.966	15,000	exhaust fan #4	
7.010	294.261	9.665	0.966	15,000	exhaust fan #5	
7.010	294.261	9.665	0.966	15,000	exhaust fan #6	
7.010	294.261	9.665	0.966	15,000	exhaust fan #8	
7.010	294.261	9.665	0.966	15,000	exhaust fan #7	
9.144	294.261	6.096	0.419	50	Shipping (radiant heat exhaust) - Vent 20	
6.000	294.261	9.600	2.500	99,850	Cooling Tower Cell 1	
6.000	294.261	9.600	2.500	99,850	Cooling Tower Cell 2	
6.000	294.261	9.600	2.500	99,850	Cooling Tower Cell 3	
10.973	352.594	7.991	0.229	695	Natural Gas Bake Oven	
6.401	301.483	2.815	0.716	2,400	10 Coining Booths	Operations are limited to 5 am - 11 pm daily
6.401	294.261	16.024	0.274	2,000	Fume hood vent, south building (prototype coater)	Operations are limited to 5 am - 11 pm daily
12.192	294.261	20.667	0.660	15,000	SV001 Battery Terminal Post Coater Stack. STRU3 was moved to a new location and became STRU73.	
4.267	327.039	9.080	0.546	4504.712	Smog Hog #15 Stack (Natural gas emission vent through STRU68 or STRU69), Tin Melt Pot	
10.820	307.650	2.752	0.889	3619	Melt Pot Room Vent for EQUI 101, 102, and 104. EQUI 103 can NOT run at the same time as EQUI 102, but is modeled at PTE for conservatism.	
10.912	398.872	6.087	0.203	418.285	Doe Run Melt Pot (EQUI 103) Natural Gas Emissions. Can NOT run same time as EQUI 102 but is evaluated at PTE for conservatism.	
3.683	312.039	9.080	0.546	4,505	Smog Hog #1 Stack	
3.734	312.039	9.080	0.546	4,505	Smog Hog #2 Stack	
3.708	312.039	7.570	0.546	3,756	Smog Hog #3 Stack	
3.632	312.039	7.570	0.546	3,756	Smog Hog #5 Stack	
3.632	312.039	7.570	0.546	3,756	Smog Hog #6 Stack	
3.683	312.039	7.570	0.546	3,756	Smog Hog #8 Stack	
3.683	312.039	7.570	0.546	3,756	Smog Hog #9 Stack	
3.861	312.039	7.570	0.546	3,756	Smog Hog #10 Stack	
3.759	312.039	7.570	0.546	3,756	Smog Hog #11 Stack	
3.810	312.039	7.570	0.546	3,756	Smog Hog #12 Stack	
5.232	312.039	7.570	0.546	3,756	Smog Hog #16 Stack	
5.182	312.039	7.570	0.546	3,756	Smog Hog #17 Stack	
5.512	312.039	7.570	0.546	3,756	Smog Hog #18 Stack	
5.334	312.039	7.570	0.546	3,756	Smog Hog #19 Stack	
5.232	312.039	7.570	0.546	3,756	Smog Hog #20 Stack	
7.315	294.261	4.040	0.546	2,004	Smog Hog #21, which does not serve as control equipment	Operations are limited to 5 am - 11 pm daily
10.058	294.261	9.665	0.966	15,000	exhaust fan #12	
10.058	294.261	9.665	0.966	15,000	exhaust fan #11	
10.058	294.261	9.665	0.966	15,000	exhaust fan #10	
10.058	294.261	9.665	0.966	15,000	exhaust fan #9	
10.058	294.261	9.665	0.966	15,000	exhaust fan #14	
7.925	294.261	12.412	1.100	25,000	exhaust fan #1	
7.925	294.261	12.412	1.100	25,000	exhaust fan #2	
7.925	294.261	12.412	1.100	25,000	exhaust fan #3	
7.010	294.261	9.665	0.966	15,000	exhaust fan #4	
7.010	294.261	9.665	0.966	15,000	exhaust fan #5	
7.010	294.261	9.665	0.966	15,000	exhaust fan #6	

7.010	294.261	9.665	0.966	15,000	exhaust fan #8	
7.010	294.261	9.665	0.966	15,000	exhaust fan #7	

EQUI113, EQUI114	STRU57	PM10	24-hour	1	NA	POINTHOR	497,458.94	4,991,211.27	283.09	1.09E-03	1.37E-04
FUGI001	CT1	PM10	24-hour	1	NA	POINT	497,506.00	4,991,256.00	283.09	1.55E-01	1.95E-02
FUGI002	CT2	PM10	24-hour	1	NA	POINT	497,513.00	4,991,255.60	283.09	1.55E-01	1.95E-02
FUGI004	CT3	PM10	24-hour	1	NA	POINT	497521.73	4991255.96	283.09	1.55E-01	1.95E-02
EQUI222	STRU70	PM10	24-hour	1	NA	POINTCAP	497,499.20	4,991,225.76	283.09	2.24E-03	2.82E-04
EQUI223-EQUI232	STRU71	PM10	24-hour	1	HROFDY	POINT	497,551.22	4,990,875.54	280.55	3.35E-02	4.22E-03
EQUI240	STRU72	PM10	24-hour	1	HROFDY	POINT	497,511.46	4,990,881.57	280.55	6.34E-03	7.98E-04
Lead RASS Annual Sennitivity: Note that annual DC Smog Hog Emissions will not run at the same time and uncaptured DC fan emissions will not run at the same time. All other plant emissions from all sources operate as shown. Note that impact r											
EQUI82, EQUI84,EQUI85, EQUI87-89,EQUI92-EQUI95, EQUI97-EQUI100, EQUI116, EQUI166, EQUI173, EQUI219, EQUI220, EQUI233	STRU73	Lead	Annual	1	NA	POINT	497,469.52	4,991,185.04	283.09	0.00E+00	0.00E+00
EQUI101-EQUI104, EQUI221	STRU1	Lead	Annual	1	NA	POINT	497,515.69	4,991,223.02	283.09	1.2369E-04	1.56E-05
EQUI101, EQUI102, EQUI104	STRU68	Lead	Annual	1	NA	POINTHOR	497,504.16	4,991,222.33	283.09	1.15E-06	1.45E-07
EQUI103	STRU69	Lead	Annual	1	NA	POINTCAP	497,511.72	4,991,232.43	283.09	2.45E-07	3.09E-08
EQUI121-EQUI123	STRU15	Lead	Annual	1	NA	POINT	497,483.54	4,991,254.83	283.09	5.50E-03	6.93E-04
EQUI124-EQUI126, EQUI157	STRU16	Lead	Annual	1	NA	POINT	497,481.97	4,991,258.10	283.09	5.50E-03	6.93E-04
EQUI127-EQUI129	STRU17	Lead	Annual	1	NA	POINT	497,482.40	4,991,265.22	283.09	5.50E-03	6.93E-04
EQUI130, EQUI131	STRU74	Lead	Annual	1	NA	POINT	497,482.33	4,991,280.77	283.09	5.50E-03	6.93E-04
EQUI132, EQUI133	STRU20	Lead	Annual	1	NA	POINT	497,482.57	4,991,286.34	283.09	5.50E-03	6.93E-04
EQUI134, EQUI135	STRU75	Lead	Annual	1	NA	POINT	497,468.95	4,991,293.05	283.09	5.50E-03	6.93E-04
EQUI136	STRU23	Lead	Annual	1	NA	POINT	497,462.23	4,991,293.31	283.09	5.50E-03	6.93E-04
EQUI137, EQUI138	STRU24	Lead	Annual	1	NA	POINT	497,449.23	4,991,294.27	283.09	5.50E-03	6.93E-04
EQUI139, EQUI140	STRU25	Lead	Annual	1	NA	POINT	497,428.18	4,991,284.88	283.09	5.50E-03	6.93E-04
EQUI141-EQUI143, EQUI155	STRU26	Lead	Annual	1	NA	POINT	497,427.99	4,991,275.47	283.09	5.50E-03	6.93E-04
EQUI146, EQUI158	STRU30	Lead	Annual	1	NA	POINT	497,514.59	4,991,210.69	283.09	5.50E-03	6.93E-04
EQUI147	STRU31	Lead	Annual	1	NA	POINT	497,513.65	4,991,198.51	283.09	5.50E-03	6.93E-04
EQUI149, EQUI150	STRU32	Lead	Annual	1	NA	POINT	497,495.07	4,991,190.04	283.09	5.50E-03	6.93E-04
EQUI152, EQUI156	STRU33	Lead	Annual	1	NA	POINT	497,489.65	4,991,190.16	283.09	5.50E-03	6.93E-04
EQUI153, EQUI154	STRU34	Lead	Annual	1	NA	POINT	497,482.45	4,991,191.19	283.09	5.50E-03	6.93E-04
EQUI160, EQUI117	STRU35	Lead	Annual	1	HROFDY	POINT	497,540.87	4,990,864.07	280.55	1.07E-04	1.35E-05
EQUI174	STRU59	Lead	Annual	1	NA	POINT	497,507.89	4,991,240.39	283.09	0.00E+00	0.00E+00
EQUI146, EQUI150, EQUI172, EQUI110, EQUI112	STRU53	Lead	Annual	1	NA	POINT	497,505.64	4,991,216.93	283.09	1.23E-06	1.55E-07
All Uncaptured DC Emissions	STRU53dc	Lead	Annual	1	NA	POINT	497,505.64	4,991,216.93	283.09	9.66E-04	1.22E-04
EQUI147, EQUI158, EQUI110, EQUI112	STRU52	Lead	Annual	1	NA	POINT	497,503.83	4,991,197.29	283.09	1.23E-06	1.55E-07
All Uncaptured DC Emissions	STRU52dc	Lead	Annual	1	NA	POINT	497,503.83	4,991,197.29	283.09	9.66E-04	1.22E-04
EQUI149, EQUI152, EQUI154, EQUI156, EQUI110, EQUI112	STRU51	Lead	Annual	1	NA	POINT	497,488.75	4,991,198.93	283.09	1.23E-06	1.55E-07
All Uncaptured DC Emissions	STRU51dc	Lead	Annual	1	NA	POINT	497,488.75	4,991,198.93	283.09	9.66E-04	1.22E-04
EQUI153, EQUI157, EQUI110, EQUI112	STRU56	Lead	Annual	1	NA	POINT	497,483.11	4,991,219.35	283.09	1.23E-06	1.55E-07
All Uncaptured DC Emissions	STRU56dc	Lead	Annual	1	NA	POINT	497,483.11	4,991,219.35	283.09	9.66E-04	1.22E-04
EQUI130-EQUI136, EQUI107, EQUI108, EQUI111	STRU44	Lead	Annual	1	NA	POINT	497,474.10	4,991,285.55	283.09	2.03E-06	2.56E-07
All Uncaptured DC Emissions	STRU44dc	Lead	Annual	1	NA	POINT	497,474.10	4,991,285.55	283.09	9.66E-04	1.22E-04
EQUI137-EQUI141, EQUI107, EQUI108, EQUI111	STRU45	Lead	Annual	1	NA	POINT	497,436.71	4,991,287.76	283.09	2.03E-06	2.56E-07
All Uncaptured DC Emissions	STRU45dc	Lead	Annual	1	NA	POINT	497,436.71	4,991,287.76	283.09	9.66E-04	1.22E-04
EQUI142, EQUI143, EQUI155, EQUI107, EQUI108, EQUI111	STRU46	Lead	Annual	1	NA	POINT	497,436.01	4,991,275.77	283.09	2.03E-06	2.56E-07
All Uncaptured DC Emissions	STRU46dc	Lead	Annual	1	NA	POINT	497,436.01	4,991,275.77	283.09	9.66E-04	1.22E-04
EQUI127-EQUI129, EQUI106, EQUI108	STRU47	Lead	Annual	1	NA	POINT	497,475.70	4,991,257.67	283.09	9.94E-07	1.25E-07
All Uncaptured DC Emissions	STRU47dc	Lead	Annual	1	NA	POINT	497,475.70	4,991,257.67	283.09	9.66E-04	1.22E-04
EQUI121, EQUI122, EQUI106, EQUI109	STRU48	Lead	Annual	1	NA	POINT	497,474.48	4,991,250.50	283.09	9.13E-07	1.15E-07
All Uncaptured DC Emissions	STRU48dc	Lead	Annual	1	NA	POINT	497,474.48	4,991,250.50	283.09	9.66E-04	1.22E-04
EQUI123, EQUI106, EQUI109	STRU49	Lead	Annual	1	NA	POINT	497,473.85	4,991,241.55	283.09	9.13E-07	1.15E-07
All Uncaptured DC Emissions	STRU49dc	Lead	Annual	1	NA	POINT	497,473.85	4,991,241.55	283.09	9.66E-04	1.22E-04
EQUI125, EQUI126, EQUI115, EQUI116, EQUI109	STRU50	Lead	Annual	1	NA	POINT	497,471.27	4,991,218.35	283.09	5.03E-06	6.33E-07
All Uncaptured DC Emissions	STRU50dc	Lead	Annual	1	NA	POINT	497,471.27	4,991,218.35	283.09	9.66E-04	1.22E-04
EQUI124, EQUI115, EQUI106, EQUI109	STRU43	Lead	Annual	1	NA	POINT	497,473.47	4,991,236.42	283.09	5.33E-06	6.72E-07
All Uncaptured DC Emissions	STRU43dc	Lead	Annual	1	NA	POINT	497,473.47	4,991,236.42	283.09	9.66E-04	1.22E-04
EQUI113, EQUI114	STRU57	Lead	Annual	1	NA	POINTHOR	497,458.94	4,991,211.27	283.09	2.29E-05	2.88E-06
EQUI222	STRU70	Lead	Annual	1	NA	POINTCAP	497,499.20	4,991,225.76	283.09	1.47E-07	1.85E-08
EQUI223-EQUI232	STRU71	Lead	Annual	1	HROFDY	POINT	497,551.22	4,990,875.54	280.55	No Emissions	No Emissions
EQUI240	STRU72	Lead	Annual	1	HROFDY	POINT	497,511.46	4,990,881.57	280.55	No Emissions	No Emissions
EQUI82, EQUI84,EQUI85, EQUI87-89,EQUI92-EQUI95, EQUI97-EQUI100, EQUI116, EQUI166, EQUI173, EQUI219, EQUI220, EQUI233	STRU73	Lead	Quarterly	1	NA	POINT	497,469.52	4,991,185.04	283.09	0.00E+00	0.00E+00

EQUI101-EQUI104, EQUI221	STRU1	Lead	Quarterly	1	NA	POINT	497,515.69	4,991,223.02	283.09	1.2369E-04	1.56E-05
EQUI101, EQUI102, EQUI104	STRU68	Lead	Quarterly	1	NA	POINTHOR	497,504.16	4,991,222.33	283.09	1.15E-06	1.45E-07
EQUI103	STRU69	Lead	Quarterly	1	NA	POINTCAP	497,511.72	4,991,232.43	283.09	2.45E-07	3.09E-08

9.144	294.261	6.096	0.419	50	Shipping (radiant heat exhaust) - Vent 20	
6.000	294.261	9.600	2.500	99849.783	Cooling Tower Cell 1	
6.000	294.261	9.600	2.500	99,850	Cooling Tower Cell 2	
6.000	294.261	9.600	2.500	99,850	Cooling Tower Cell 3	
10.973	352.594	7.991	0.229	694.930	Natural Gas Bake Oven	
6.401	301.483	2.815	0.716	2400.000	10 Coining Booths	Operations are limited to 5 am - 11 pm daily
6.401	294.261	16.0241	0.274	2000	Fume hood vent, south building (prototype coater)	Operations are limited to 5 am - 11 pm daily
esults are controlled with 12 source groups in 15 separate model runs. See AnnualLeadRASSMemo tab.						
12.192	294.261	20.667	0.660	15,000	SV001 Battery Terminal Post Coater Stack. STRU3 was moved to a new location and became STRU73.	
4.267	327.039	9.080	0.546	4,505	Smog Hog #15 Stack (Natural gas emission vent through STRU68 or STRU69), Tin Melt Pot	
10.820	307.650	2.752	0.889	3619	Melt Pot Room Vent	
10.912	398.872	6.087	0.203	418	Doe Run Melt Pot Natural Gas Emissions	
3.683	312.039	9.080	0.546	4,505	Smog Hog #1 Stack	
3.734	312.039	9.080	0.546	4,505	Smog Hog #2 Stack	
3.708	312.039	7.570	0.546	3,756	Smog Hog #3 Stack	
3.632	312.039	7.570	0.546	3,756	Smog Hog #5 Stack	
3.632	312.039	7.570	0.546	3,756	Smog Hog #6 Stack	
3.683	312.039	7.570	0.546	3,756	Smog Hog #8 Stack	
3.683	312.039	7.570	0.546	3,756	Smog Hog #9 Stack	
3.861	312.039	7.570	0.546	3,756	Smog Hog #10 Stack	
3.759	312.039	7.570	0.546	3,756	Smog Hog #11 Stack	
3.810	312.039	7.570	0.546	3,756	Smog Hog #12 Stack	
5.232	312.039	7.570	0.546	3,756	Smog Hog #16 Stack	
5.182	312.039	7.570	0.546	3,756	Smog Hog #17 Stack	
5.512	312.039	7.570	0.546	3,756	Smog Hog #18 Stack	
5.334	312.039	7.570	0.546	3,756	Smog Hog #19 Stack	
5.232	312.039	7.570	0.546	3,756	Smog Hog #20 Stack	
7.315	294.261	4.040	0.546	2,004	Smog Hog #21, which does not serve as control equipment	Operations are limited to 5 am - 11 pm daily
10.058	294.261	9.665	0.966	15,000	exhaust fan #12	
10.058	294.261	9.665	0.966	15,000	exhaust fan #11	
10.0584	294.261	9.665	0.966	15000	All annual uncaptured DC emissions	
10.058	294.261	9.665	0.966	15,000	exhaust fan #10	
10.0584	294.261	9.665	0.966	15000	All annual uncaptured DC emissions	
10.058	294.261	9.665	0.966	15,000	exhaust fan #9	
10.0584	294.261	9.665	0.966	15000	All annual uncaptured DC emissions	
10.058	294.261	9.665	0.966	15,000	exhaust fan #14	
10.0584	294.261	9.665	0.966	15000	All annual uncaptured DC emissions	
7.925	294.261	12.412	1.100	25,000	exhaust fan #1	
7.9248	294.261	12.412	1.100	25000	All annual uncaptured DC emissions	
7.925	294.261	12.412	1.100	25,000	exhaust fan #2	
7.9248	294.261	12.412	1.100	25000	All annual uncaptured DC emissions	
7.925	294.261	12.412	1.100	25,000	exhaust fan #3	
7.9248	294.261	12.412	1.100	25000	All annual uncaptured DC emissions	
7.010	294.261	9.665	0.966	15,000	exhaust fan #4	
7.0104	294.261	9.665	0.966	15000	All annual uncaptured DC emissions	
7.010	294.261	9.665	0.966	15,000	exhaust fan #5	
7.0104	294.261	9.665	0.966	15000	All annual uncaptured DC emissions	
7.010	294.261	9.665	0.966	15,000	exhaust fan #6	
7.0104	294.261	9.665	0.966	15000	All annual uncaptured DC emissions	
7.010	294.261	9.665	0.966	15,000	exhaust fan #8	
7.0104	294.261	9.665	0.966	15000	All annual uncaptured DC emissions	
7.010	294.261	9.665	0.966	15,000	exhaust fan #7	
7.0104	294.261	9.665	0.966	15000	All annual uncaptured DC emissions	
9.144	294.261	6.096	0.419	50	Shipping (radiant heat exhaust) - Vent 20	
10.973	352.594	7.991	0.229	695	Natural Gas Bake Oven	
6.401	301.483	2.815	0.716	2,400	10 Coining Booths	Operations are limited to 5 am - 11 pm daily
6.401	294.261	16.0241	0.274	2000	Fume hood vent, south building (prototype coater)	Operations are limited to 5 am - 11 pm daily
12.192	294.261	20.667	0.660	15,000	SV001 Battery Terminal Post Coater Stack. STRU3 was moved to a new location and became STRU73.	

4.267	327.039	9.080	0.546	4,505	Smog Hog #15 Stack (Natural gas emission vent through STRU68 or STRU69), Tin Melt Pot	
10.820	307.650	2.752	0.889	3,619	Melt Pot Room Vent	
10.912	398.872	6.087	0.203	418	Doe Run Melt Pot Natural Gas Emissions	

EQUI121-EQUI123	STRU15	Lead	Quarterly	1	NA	POINT	497,483.54	4,991,254.83	283.09	9.58E-04	1.21E-04
EQUI124-EQUI126, EQUI157	STRU16	Lead	Quarterly	1	NA	POINT	497,481.97	4,991,258.10	283.09	1.57E-03	1.98E-04
EQUI127-EQUI129	STRU17	Lead	Quarterly	1	NA	POINT	497,482.40	4,991,265.22	283.09	4.59E-04	5.79E-05
EQUI130, EQUI131	STRU74	Lead	Quarterly	1	NA	POINT	497,482.33	4,991,280.77	283.09	5.14E-04	6.47E-05
EQUI132, EQUI133	STRU20	Lead	Quarterly	1	NA	POINT	497,482.57	4,991,286.34	283.09	6.22E-04	7.83E-05
EQUI134, EQUI135	STRU75	Lead	Quarterly	1	NA	POINT	497,468.95	4,991,293.05	283.09	8.25E-04	1.04E-04
EQUI136	STRU23	Lead	Quarterly	1	NA	POINT	497,462.23	4,991,293.31	283.09	5.48E-04	6.90E-05
EQUI137, EQUI138	STRU24	Lead	Quarterly	1	NA	POINT	497,449.23	4,991,294.27	283.09	5.43E-04	6.84E-05
EQUI139, EQUI140	STRU25	Lead	Quarterly	1	NA	POINT	497,428.18	4,991,284.88	283.09	6.51E-04	8.20E-05
EQUI141-EQUI143, EQUI155	STRU26	Lead	Quarterly	1	NA	POINT	497,427.99	4,991,275.47	283.09	1.36E-03	1.71E-04
EQUI146, EQUI158	STRU30	Lead	Quarterly	1	NA	POINT	497,514.59	4,991,210.69	283.09	1.49E-03	1.88E-04
EQUI147	STRU31	Lead	Quarterly	1	NA	POINT	497,513.65	4,991,198.51	283.09	7.35E-04	9.26E-05
EQUI149, EQUI150	STRU32	Lead	Quarterly	1	NA	POINT	497,495.07	4,991,190.04	283.09	7.41E-04	9.34E-05
EQUI152, EQUI156	STRU33	Lead	Quarterly	1	NA	POINT	497,489.65	4,991,190.16	283.09	1.32E-03	1.67E-04
EQUI153, EQUI154	STRU34	Lead	Quarterly	1	NA	POINT	497,482.45	4,991,191.19	283.09	1.42E-03	1.78E-04
EQUI160, EQUI117	STRU35	Lead	Quarterly	1	HROFDY	POINT	497,540.87	4,990,864.07	280.55	4.41E-03	5.56E-04
EQUI174	STRU59	Lead	Quarterly	1	NA	POINT	497,507.89	4,991,240.39	283.09	0.00E+00	0.00E+00
EQUI146, EQUI150, EQUI172, EQUI110, EQUI112	STRU53	Lead	Quarterly	1	NA	POINT	497,505.64	4,991,216.93	283.09	1.96E-04	2.47E-05
EQUI147, EQUI158, EQUI110, EQUI112	STRU52	Lead	Quarterly	1	NA	POINT	497,503.83	4,991,197.29	283.09	2.63E-04	3.31E-05
EQUI149, EQUI152, EQUI154, EQUI156, EQUI110, EQUI112	STRU51	Lead	Quarterly	1	NA	POINT	497,488.75	4,991,198.93	283.09	4.19E-04	5.28E-05
EQUI153, EQUI157, EQUI110, EQUI112	STRU56	Lead	Quarterly	1	NA	POINT	497,483.11	4,991,219.35	283.09	2.68E-04	3.38E-05
EQUI130-EQUI136, EQUI107, EQUI108, EQUI111	STRU44	Lead	Quarterly	1	NA	POINT	497,474.10	4,991,285.55	283.09	4.42E-04	5.57E-05
EQUI137-EQUI141, EQUI107, EQUI108, EQUI111	STRU45	Lead	Quarterly	1	NA	POINT	497,436.71	4,991,287.76	283.09	2.91E-04	3.67E-05
EQUI142, EQUI143, EQUI155, EQUI107, EQUI108, EQUI111	STRU46	Lead	Quarterly	1	NA	POINT	497,436.01	4,991,275.77	283.09	1.61E-04	2.03E-05
EQUI127-EQUI129, EQUI106, EQUI108	STRU47	Lead	Quarterly	1	NA	POINT	497,475.70	4,991,257.67	283.09	8.16E-05	1.03E-05
EQUI121, EQUI122, EQUI106, EQUI109	STRU48	Lead	Quarterly	1	NA	POINT	497,474.48	4,991,250.50	283.09	1.26E-04	1.59E-05
EQUI123, EQUI106, EQUI109	STRU49	Lead	Quarterly	1	NA	POINT	497,473.85	4,991,241.55	283.09	4.40E-05	5.55E-06
EQUI125, EQUI126, EQUI115, EQUI116, EQUI109	STRU50	Lead	Quarterly	1	NA	POINT	497,471.27	4,991,218.35	283.09	8.72E-05	1.10E-05
EQUI124, EQUI115, EQUI106, EQUI109	STRU43	Lead	Quarterly	1	NA	POINT	497,473.47	4,991,236.42	283.09	5.91E-05	7.44E-06
EQUI113, EQUI114	STRU57	Lead	Quarterly	1	NA	POINTHOR	497,458.94	4,991,211.27	283.09	2.29E-05	2.88E-06
EQUI222	STRU70	Lead	Quarterly	1	NA	POINTCAP	497,499.20	4,991,225.76	283.09	1.47E-07	1.85E-08
EQUI223-EQUI232	STRU71	Lead	Quarterly	1	HROFDY	POINT	497,551.22	4,990,875.54	280.55	No Emissions	No Emissions
EQUI240	STRU72	Lead	Quarterly	1	HROFDY	POINT	497,511.46	4,990,881.57	280.55	No Emissions	No Emissions
EQUI82, EQUI84,EQUI85, EQUI87-89,EQUI92-EQUI95, EQUI97-EQUI100, EQUI116, EQUI166, EQUI173, EQUI219, EQUI220, EQUI233	STRU73	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,469.52	4,991,185.04	283.09	7.94E+00	1.00E+00
EQUI101-EQUI104, EQUI221	STRU1	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,515.69	4,991,223.02	283.09	7.9365E+00	1.00E+00
EQUI121-EQUI123	STRU15	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,483.54	4,991,254.83	283.09	7.94E+00	1.00E+00
EQUI124-EQUI126, EQUI157	STRU16	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,481.97	4,991,258.10	283.09	7.94E+00	1.00E+00
EQUI127-EQUI129	STRU17	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,482.40	4,991,265.22	283.09	7.94E+00	1.00E+00
EQUI130, EQUI131	STRU74	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,482.33	4,991,280.77	283.09	7.94E+00	1.00E+00
EQUI132, EQUI133	STRU20	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,482.57	4,991,286.34	283.09	7.94E+00	1.00E+00
EQUI134, EQUI135	STRU75	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,468.95	4,991,293.05	283.09	7.94E+00	1.00E+00
EQUI136	STRU23	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,462.23	4,991,293.31	283.09	7.94E+00	1.00E+00
EQUI137, EQUI138	STRU24	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,449.23	4,991,294.27	283.09	7.94E+00	1.00E+00
EQUI139, EQUI140	STRU25	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,428.18	4,991,284.88	283.09	7.94E+00	1.00E+00
EQUI141-EQUI143, EQUI155	STRU26	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,427.99	4,991,275.47	283.09	7.94E+00	1.00E+00
EQUI146, EQUI158	STRU30	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,514.59	4,991,210.69	283.09	7.94E+00	1.00E+00
EQUI147	STRU31	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,513.65	4,991,198.51	283.09	7.94E+00	1.00E+00
EQUI149, EQUI150	STRU32	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,495.07	4,991,190.04	283.09	7.94E+00	1.00E+00
EQUI152, EQUI156	STRU33	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,489.65	4,991,190.16	283.09	7.94E+00	1.00E+00
EQUI153, EQUI154	STRU34	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,482.45	4,991,191.19	283.09	7.94E+00	1.00E+00

EQUI160, EQUI117	STRU35	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	HROFDY	POINT	497,540.87	4,990,864.07	280.55	7.94E+00	1.00E+00
EQUI167	STRU41	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,479.00	4,991,262.00	283.09	7.94E+00	1.00E+00

3.683	312.039	9.080	0.546	4,505	Smog Hog #1 Stack	
3.734	312.039	9.080	0.546	4,505	Smog Hog #2 Stack	
3.708	312.039	7.570	0.546	3,756	Smog Hog #3 Stack	
3.632	312.039	7.570	0.546	3,756	Smog Hog #5 Stack	
3.632	312.039	7.570	0.546	3,756	Smog Hog #6 Stack	
3.683	312.039	7.570	0.546	3,756	Smog Hog #8 Stack	
3.683	312.039	7.570	0.546	3,756	Smog Hog #9 Stack	
3.861	312.039	7.570	0.546	3,756	Smog Hog #10 Stack	
3.759	312.039	7.570	0.546	3,756	Smog Hog #11 Stack	
3.810	312.039	7.570	0.546	3,756	Smog Hog #12 Stack	
5.232	312.039	7.570	0.546	3,756	Smog Hog #16 Stack	
5.182	312.039	7.570	0.546	3,756	Smog Hog #17 Stack	
5.512	312.039	7.570	0.546	3,756	Smog Hog #18 Stack	
5.334	312.039	7.570	0.546	3,756	Smog Hog #19 Stack	
5.232	312.039	7.570	0.546	3,756	Smog Hog #20 Stack	
7.315	294.261	4.040	0.546	2,004	Smog Hog #21, which does not serve as control equipment	
10.058	294.261	9.665	0.966	15,000	exhaust fan #12	
10.058	294.261	9.665	0.966	15,000	exhaust fan #11	
10.058	294.261	9.665	0.966	15,000	exhaust fan #10	
10.058	294.261	9.665	0.966	15,000	exhaust fan #9	
10.058	294.261	9.665	0.966	15,000	exhaust fan #14	
7.925	294.261	12.412	1.100	25,000	exhaust fan #1	
7.925	294.261	12.412	1.100	25,000	exhaust fan #2	
7.925	294.261	12.412	1.100	25,000	exhaust fan #3	
7.010	294.261	9.665	0.966	15,000	exhaust fan #4	
7.010	294.261	9.665	0.966	15,000	exhaust fan #5	
7.010	294.261	9.665	0.966	15,000	exhaust fan #6	
7.010	294.261	9.665	0.966	15,000	exhaust fan #8	
7.010	294.261	9.665	0.966	15,000	exhaust fan #7	
9.144	294.261	6.096	0.419	50	Shipping (radiant heat exhaust) - Vent 20	
10.973	352.594	7.991	0.229	695	Natural Gas Bake Oven	
6.401	301.483	2.815	0.716	2,400	10 Coining Booths	
6.401	294.261	16.024	0.274	2,000	Fume hood vent, south building (prototype coater)	
12.192	294.261	20.667	0.660	15,000	SV001 Battery Terminal Post Coater Stack. STRU3 was moved to a new location and became STRU73.	
4.267	327.039	9.080	0.546	4,505	Smog Hog #15 Stack (Natural gas emission vent through STRU68 or STRU69), Tin Melt Pot	
3.683	312.039	9.080	0.546	4,505	Smog Hog #1 Stack	
3.734	312.039	9.080	0.546	4,505	Smog Hog #2 Stack	
3.708	312.039	7.570	0.546	3,756	Smog Hog #3 Stack	
3.632	312.039	7.570	0.546	3,756	Smog Hog #5 Stack	
3.632	312.039	7.570	0.546	3,756	Smog Hog #6 Stack	
3.683	312.039	7.570	0.546	3,756	Smog Hog #8 Stack	
3.683	312.039	7.570	0.546	3,756	Smog Hog #9 Stack	
3.861	312.039	7.570	0.546	3,756	Smog Hog #10 Stack	
3.759	312.039	7.570	0.546	3,756	Smog Hog #11 Stack	
3.810	312.039	7.570	0.546	3,756	Smog Hog #12 Stack	
5.232	312.039	7.570	0.546	3,756	Smog Hog #16 Stack	
5.182	312.039	7.570	0.546	3,756	Smog Hog #17 Stack	
5.512	312.039	7.570	0.546	3,756	Smog Hog #18 Stack	
5.334	312.039	7.570	0.546	3,756	Smog Hog #19 Stack	
5.232	312.039	7.570	0.546	3,756	Smog Hog #20 Stack	

7.315	294.261	4.040	0.546	2,004	Smog Hog #21, which does not serve as control equipment	Operations are limited to 5 am - 11 pm daily
5.232	294.261	10.114	0.203	695	Mitigation System Stack	

EQUI174	STRU59	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,507.89	4,991,240.39	283.09	7.94E+00	1.00E+00
EQUI146, EQUI150, EQUI172, EQUI110, EQUI112	STRU53	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,505.64	4,991,216.93	283.09	7.94E+00	1.00E+00
EQUI147, EQUI158, EQUI110, EQUI112	STRU52	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,503.83	4,991,197.29	283.09	7.94E+00	1.00E+00
EQUI149, EQUI152, EQUI154, EQUI156, EQUI110, EQUI112	STRU51	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,488.75	4,991,198.93	283.09	7.94E+00	1.00E+00
EQUI153, EQUI157, EQUI110, EQUI112	STRU56	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,483.11	4,991,219.35	283.09	7.94E+00	1.00E+00
STRU60	STRU60	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,485.50	4,991,242.54	283.09	7.94E+00	1.00E+00
EQUI130-EQUI136, EQUI107, EQUI108, EQUI111	STRU44	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,474.10	4,991,285.55	283.09	7.94E+00	1.00E+00
EQUI137-EQUI141, EQUI107, EQUI108, EQUI111	STRU45	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,436.71	4,991,287.76	283.09	7.94E+00	1.00E+00
EQUI142, EQUI143, EQUI155, EQUI107, EQUI108, EQUI111	STRU46	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,436.01	4,991,275.77	283.09	7.94E+00	1.00E+00
EQUI127-EQUI129, EQUI106, EQUI108	STRU47	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,475.70	4,991,257.67	283.09	7.94E+00	1.00E+00
EQUI121, EQUI122, EQUI106, EQUI109	STRU48	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,474.48	4,991,250.50	283.09	7.94E+00	1.00E+00
EQUI123, EQUI106, EQUI109	STRU49	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,473.85	4,991,241.55	283.09	7.94E+00	1.00E+00
EQUI125, EQUI126, EQUI115, EQUI116, EQUI109	STRU50	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,471.27	4,991,218.35	283.09	7.94E+00	1.00E+00
EQUI124, EQUI115, EQUI106, EQUI109	STRU43	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINT	497,473.47	4,991,236.42	283.09	7.94E+00	1.00E+00
EQUI113, EQUI114	STRU57	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINTHOR	497,458.94	4,991,211.27	283.09	7.94E+00	1.00E+00
EQUI101, EQUI102, EQUI104	STRU68	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINTHOR	497,504.16	4,991,222.33	283.09	7.94E+00	1.00E+00
EQUI103	STRU69	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINTCAP	497,511.72	4,991,232.43	283.09	7.94E+00	1.00E+00
EQUI222	STRU70	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	NA	POINTCAP	497,499.20	4,991,225.76	283.09	7.94E+00	1.00E+00
EQUI223-EQUI232	STRU71	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	HROFDY	POINT	497,551.22	4,990,875.54	280.55	7.94E+00	1.00E+00
EQUI240	STRU72	Unit Emission Rate	1, 3, 8, 24, Month, Annual	1	HROFDY	POINT	497,511.46	4,990,881.57	280.55	7.94E+00	1.00E+00
EQUI82, EQUI84,EQUI85, EQUI87-89,EQUI92-EQUI95, EQUI97-EQUI100, EQUI116, EQUI166, EQUI173, EQUI219, EQUI220, EQUI233	STRU73	NOX	1-Hour, Annual	1	NA	POINT	497,469.52	4,991,185.04	283.09	No Emissions	No Emissions
EQUI101, EQUI102, EQUI104	STRU68	NOX	1-Hour, Annual	1	NA	POINTHOR	497,504.16	4,991,222.33	283.09	2.29E-01	2.89E-02
EQUI103	STRU69	NOX	1-Hour, Annual	1	NA	POINTCAP	497,511.72	4,991,232.43	283.09	4.90E-02	6.18E-03
EQUI146, EQUI150, EQUI172, EQUI110, EQUI112	STRU53	NOX	1-Hour, Annual	1	MONTH	POINT	497,505.64	4,991,216.93	283.09	2.45E-01	3.09E-02
EQUI147, EQUI158, EQUI110, EQUI112	STRU52	NOX	1-Hour, Annual	1	MONTH	POINT	497,503.83	4,991,197.29	283.09	2.45E-01	3.09E-02
EQUI149, EQUI152, EQUI154, EQUI156, EQUI110, EQUI112	STRU51	NOX	1-Hour, Annual	1	MONTH	POINT	497,488.75	4,991,198.93	283.09	2.45E-01	3.09E-02
EQUI153, EQUI157, EQUI110, EQUI112	STRU56	NOX	1-Hour, Annual	1	MONTH	POINT	497,483.11	4,991,219.35	283.09	2.45E-01	3.09E-02
EQUI130-EQUI136, EQUI107, EQUI108, EQUI111	STRU44	NOX	1-Hour, Annual	1	MONTH	POINT	497,474.10	4,991,285.55	283.09	4.07E-01	5.13E-02
EQUI137-EQUI141, EQUI107, EQUI108, EQUI111	STRU45	NOX	1-Hour, Annual	1	MONTH	POINT	497,436.71	4,991,287.76	283.09	4.07E-01	5.13E-02
EQUI142, EQUI143, EQUI155, EQUI107, EQUI108, EQUI111	STRU46	NOX	1-Hour, Annual	1	MONTH	POINT	497,436.01	4,991,275.77	283.09	4.07E-01	5.13E-02
EQUI127-EQUI129, EQUI106, EQUI108	STRU47	NOX	1-Hour, Annual	1	MONTH	POINT	497,475.70	4,991,257.67	283.09	1.99E-01	2.50E-02
EQUI121, EQUI122, EQUI106, EQUI109	STRU48	NOX	1-Hour, Annual	1	MONTH	POINT	497,474.48	4,991,250.50	283.09	1.83E-01	2.30E-02
EQUI123, EQUI106, EQUI109	STRU49	NOX	1-Hour, Annual	1	MONTH	POINT	497,473.85	4,991,241.55	283.09	1.83E-01	2.30E-02
EQUI109	STRU50	NOX	1-Hour, Annual	1	MONTH	POINT	497,471.27	4,991,218.35	283.09	1.21E-01	1.53E-02
EQUI106, EQUI109	STRU43	NOX	1-Hour, Annual	1	MONTH	POINT	497,473.47	4,991,236.42	283.09	1.83E-01	2.30E-02
EQUI222	STRU70	NOX	1-Hour, Annual	1	NA	POINTCAP	497,499.20	4,991,225.76	283.09	2.94E-02	3.71E-03

10.058	294.261	9.665	0.966	15,000	exhaust fan #12	
10.058	294.261	9.665	0.966	15,000	exhaust fan #11	
10.058	294.261	9.665	0.966	15,000	exhaust fan #10	
10.058	294.261	9.665	0.966	15,000	exhaust fan #9	
10.058	294.261	9.665	0.966	15,000	exhaust fan #14	
10.058	294.261	9.665	0.966	15,000	exhaust fan #13	
7.925	294.261	12.412	1.100	25,000	exhaust fan #1	
7.925	294.261	12.412	1.100	25,000	exhaust fan #2	
7.925	294.261	12.412	1.100	25,000	exhaust fan #3	
7.010	294.261	9.665	0.966	15,000	exhaust fan #4	
7.010	294.261	9.665	0.966	15,000	exhaust fan #5	
7.010	294.261	9.665	0.966	15,000	exhaust fan #6	
7.010	294.261	9.665	0.966	15,000	exhaust fan #8	
7.010	294.261	9.665	0.966	15,000	exhaust fan #7	
9.144	294.261	6.096	0.419	50	Shipping (radiant heat exhaust) - Vent 20	
10.820	307.650	2.752	0.889	3,619	Melt Pot Room Vent	
10.912	398.872	6.087	0.203	418	Doe Run Melt Pot Natural Gas Emissions	
10.973	352.594	7.991	0.229	695	Natural Gas Bake Oven	
6.401	301.483	2.815	0.716	2,400	10 Coining Booths	Operations are limited to 5 am - 11 pm daily
6.401	294.261	16.024	0.274	2,000	Fume hood vent, south building (prototype coater)	Operations are limited to 5 am - 11 pm daily
12.192	294.261	20.667	0.660	15,000	SV001 Battery Terminal Post Coater Stack. STRU3 was moved to a new location and became STRU73.	
10.820	307.650	2.752	0.889	3,619	Melt Pot Room Vent for EQUI 101, 102, and 104. EQUI 103 can NOT run at the same time as EQUI 102, but is modeled at PTE for conservatism.	
10.912	398.872	6.087	0.203	418	Doe Run Melt Pot (EQUI 103) Natural Gas Emissions. Can NOT run same time as EQUI 102 but is evaluated at PTE for conservatism.	
10.058	294.261	9.665	0.966	15,000	exhaust fan #11	Natural gas heating off in June, July and August
10.058	294.261	9.665	0.966	15,000	exhaust fan #10	Natural gas heating off in June, July and August
10.058	294.261	9.665	0.966	15,000	exhaust fan #9	Natural gas heating off in June, July and August
10.058	294.261	9.665	0.966	15,000	exhaust fan #14	Natural gas heating off in June, July and August
7.925	294.261	12.412	1.100	25,000	exhaust fan #1	Natural gas heating off in June, July and August
7.925	294.261	12.412	1.100	25,000	exhaust fan #2	Natural gas heating off in June, July and August
7.925	294.261	12.412	1.100	25,000	exhaust fan #3	Natural gas heating off in June, July and August
7.010	294.261	9.665	0.966	15,000	exhaust fan #4	Natural gas heating off in June, July and August
7.010	294.261	9.665	0.966	15,000	exhaust fan #5	Natural gas heating off in June, July and August
7.010	294.261	9.665	0.966	15,000	exhaust fan #6	Natural gas heating off in June, July and August
7.010	294.261	9.665	0.966	15,000	exhaust fan #8	Natural gas heating off in June, July and August
7.010	294.261	9.665	0.966	15,000	exhaust fan #7	Natural gas heating off in June, July and August
10.973	352.594	7.991	0.229	695	Natural Gas Bake Oven	

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

AQDM-02

Air Quality Dispersion Modeling (AQDM) protocol spreadsheet

(Previously AQDMPS-01)

Doc Type: Air Dispersion Modeling

Note: Permit applicants may create their own spreadsheet tabs.

AQ Facility ID number:	12300341
Facility name:	Water Gremlin Company
Facility address:	4400 Otter Lake Road
Facility contact:	Mary Gail Scott

Model Input Key

Parameters	Units	Description
Permit ID		ID given in Permit or contact MPCA permit engineer
AERMOD ID		3-character facility ID plus AREA source ID used in Modeling (up to 8 characters), e.g. FACFS001
Pollutant		Criteria pollutant modeled, PM2.5, PM10, SO2, NO2, CO, Pb, O3
Averaging time		Modeling Period for pollutant, 1-HR, 24-HR, Annual, etc.
Operating scenario	[#]	A number indicating the operating condition, described in the Emission Calculations tab, for which the emission rate will be modeled.
Scalar/Variable emissions_type		By Season (SEASON); By Month (MONTH); By Hour-of-Day (HROFDY); By Wind Speed (WSPEED); By Season/Hour (SEASHR); By Season/Hour/Day (SHRDOW); By Season/Hour/Seven Days (SHRDOW7); By Month/Hour/Day (MHRDOW); By Month/Hour/Seven Days (MHRDOW7); By Hour/Seven Days (HRDOW7); By Hour/Day (HRDOW)
X1 =	[m]	X coordinate of source location [m] Enter here the X coordinate for the vertex of the area source that occurs in the southwest quadrant of the source.
Y1 =	[m]	Y coordinate of source location [m] Enter here the Y coordinate for the vertex of the area source that occurs in the southwest quadrant of the source.
Base_Elev =	[m]	Source base elevation above mean sea level
Emission_Rate =	[g/s/m2]	Emission rate (g/s for POINT, POINTCAP, POINTHOR, and VOLUME; g/s/m^2 for AREA, AREAPOLY, AREACIRC, and OPENPIT)
Height =	[m]	Release height above ground
Length_X =	[m]	X side length of the AREA
Length_Y =	[m]	Y side length of the AREA
Rotation angle	[deg]	
SigmaZ =	[m]	Initial sigma Z (optional for all AREA)
Num_Coords =		Number of coordinate pairs (POINT = 1, VOLUME = 1, OPENPIT = 1, AREA = 1, AREA_CIRC = 1, AREA_POLY >= 3)
Desc =		Optional description
SO EMISFACT Description		Scalar/Variable emissions description

Permit	AERMOD	Pollutant	Averaging time	Operating scenario	Scalar/Variable emissions_type	X1	Y1	Base_Elev	Emission_Rate	Emission_Rate	Height	Length_X	Length_Y	Rotation_Angle	sigma z	Description	SO EMISFACT Description
ID	ID					[m]	[m]	[m]	(g/sec/m^2)	(lb/hr/ft^2)	[m]	[m]	[m]	[deg]	[m]		
FS001	FACCONCWE	PM10	24-hr	2		483,070.730	5,247,239.030	469.24	1		0	200	500	0		parking lot	
FS002	FACOXPILE	PM2.5	24-hr	1	WSPEED	483,070.730	5,247,239.030	469.24	0.000005286		0	50	100	0		talings basin	WSPEED will be used to represent emission rates as varied by wind speed in 5 default categories (A-E)

Permit	AERMOD	Pollutant	Averaging time	Operating scenario	Scalar/Variable emissions_type	X1	Y1	Base_Elev	Emission_Rate	Emission_Rate	Height	Length_X	Length_Y	Rotation_Angle	sigma z	Description	SO EMISFACT Description
ID	ID			#		[m]	[m]	[m]	(g/sec/m^2)	(lb/hr/ft^2)	[m]	[m]	[m]	[deg]	[m]		
NA - No Area Sources																	

MINNESOTA POLLUTION CONTROL AGENCY

520 Lafayette Road North
St. Paul, MN 55155-4194

AQDM-02

Air Quality Dispersion Modeling (AQDM) protocol spreadsheet

(Previously AQDMPS-01)

Doc Type: Air Dispersion Modeling

Note: Permit applicants may create their own spreadsheet tabs.

AQ Facility ID number:	12300341
Facility name:	Water Gremlin Company
Facility address:	4400 Otter Lake Road
Facility contact:	Mary Gail Scott

Model Input Key

Parameters	Units	Description
Permit ID		ID given in Permit or contact MPCA permit engineer
AERMOD ID		3-character facility ID plus VOLUME source ID used in Modeling (up to 8 characters), e.g. FACFS001
Pollutant		Criteria pollutant modeled, PM2.5, PM10, SO2, NO2, CO, Pb, O3
Averaging time		Modeling Period for pollutant, 1-HR, 24-HR, Annual, etc.
Operating scenario	[#]	A number indicating the operating condition, described in the Emission Calculations tab, for which the emission rate will be modeled.
Scalar/Variable emissions_type		By Season (SEASON); By Month (MONTH); By Hour-of-Day (HROFDY); By Wind Speed (WSPEED); By Season/Hour (SEASHR); By Season/Hour/Day (SHRDOW); By Season/Hour/Seven Days (SHRDOW7); By Month/Hour/Day (MHRDOW); By Month/Hour/Seven Days (MHRDOW7); By Hour/Seven Days (HRDOW7); By Hour/Day (HRDOW)
X1 =	[m]	X coordinate of source location [m]
Y1 =	[m]	Y coordinate of source location [m]
Base_Elev =	[m]	Source base elevation above mean sea level
Emission_Rate =	[g/s]	Emission rate (g/s for POINT, POINTCAP, POINTHOR, and VOLUME; g/s/m^2 for AREA, AREAPOLY, AREACIRC, and OPENPIT)
Height =	[m]	Release height above ground
SigmaY =	[m]	Initial sigma Y (VOLUME only)
SigmaZ =	[m]	Initial sigma Z (all AREA and VOLUME only, optional for all AREA)
Length_X =	[m]	X side length (OPEN PIT, AREA and VOLUME only, optional for VOLUME, will be used to calculate SigmaY)
Desc =		source description
SO EMISFACT Description		Scalar/Variable emissions description

						Easting	Northing					dimension	Vertical dimension			
Permit	AERMOD	Pollutant	Averaging time	Operating scenario	Scalar/Va emissions	X1	Y1	Base_Elev	Emission_Rate	Emission_Rate	Height	SigmaY	SigmaZ	Length_X		
ID	ID					[m]	[m]	[m]	(lb/hr)	(g/sec)	[m]	[m]	[m]	[m]	Description	SO EMISFACT Description
FS002	FACCONCWE	$PM_{2.5}$	24-hr	2	SHRDO	483,070.730	5,247,239.030	469.24			5	0.2	0.47		haul road	SHRDOW will be used to represent traffic occuring from 6AM to 10AM and 4PM to 6PM Monday-Friday year round
FS003	FACSPACEHT	NO_2	24-hr	1		483,070.730	5,247,239.030	469.24			5	15.2	4.65		space heaters	

						Easting	Northing					Lateral dimension	Vertical dimension			
Permit	AERMOD	Pollutant	Averaging time	Operating scenario	Scalar/Variable emissions_type	X1	Y1	Base_Elev	Emission_Rate	Emission_Rate	Height	SigmaY	SigmaZ	Length_X		
ID	ID					[m]	[m]	[m]	(lb/hr)	(g/sec)	[m]	[m]	[m]	[m]	Description	SO EMISFACT Description
COMG10	NBLDGIA	PM2.5	24-hour; Annual	1	Month	497,473.68	4,991,235.04	283.09	0.0797	1.004E-02	7.620	22.102	3.544	95.04	North Building Insignificant Natural Gas Units	
COMG10	NBLDGIA	PM10	24-hour	1	Month	497,473.68	4,991,235.04	283.09	0.0797	1.004E-02	7.620	22.102	3.544	95.04	North Building Insignificant Natural Gas Units	
COMG10	NBLDGIA	NOX	1-hour, annual	1	Month	497,473.68	4,991,235.04	283.09	1.0482	1.321E-01	7.620	22.102	3.544	95.04	North Building Insignificant Natural Gas Units	
COMG10	NBLDGIA	Lead	Qtr	1	Month	497,473.68	4,991,235.04	283.09	5.24E-06	6.604E-07	7.620	22.102	3.544	95.04	North Building Insignificant Natural Gas Units	
COMG15	SBLDGIA	PM2.5	24-hour; Annual	1	Month	497,533.39	4,990,886.29	280.55	0.0171	2.153E-03	5.49	11.89	2.55	51.12	South Building Insignificant Natural Gas Units	
COMG15	SBLDGIA	PM10	24-hour	1	Month	497,533.39	4,990,886.29	280.55	0.0171	2.153E-03	5.49	11.89	2.55	51.12	South Building Insignificant Natural Gas Units	
COMG15	SBLDGIA	NOX	1-hour, annual	1	Month	497,533.39	4,990,886.29	280.55	0.2248	2.833E-02	5.49	11.89	2.55	51.12	South Building Insignificant Natural Gas Units	
COMG15	SBLDGIA	Lead	Qtr	1	Month	497,533.39	4,990,886.29	280.55	1.12E-06	1.4163E-07	5.49	11.89	2.55	51.12	South Building Insignificant Natural Gas Units	
FUGI003	NBLDG1	PM10	24-hr	1	NA	497,444.500	4,991,196.930	282.040	7.76E-04	9.782E-05	2.591	4.65	2.41	20.000	North Building Paved Roads Segment #1	
FUGI003	NBLDG2	PM10	24-hr	1	NA	497,437.110	4,991,190.200	282.090	7.76E-04	9.782E-05	2.591	4.65	2.41	20.000	North Building Paved Roads Segment #1	
FUGI003	NBLDG3	PM10	24-hr	1	NA	497,429.710	4,991,183.470	281.840	7.76E-04	9.782E-05	2.591	4.65	2.41	20.000	North Building Paved Roads Segment #1	
FUGI003	NBLDG4	PM10	24-hr	1	NA	497,422.320	4,991,176.740	281.760	7.76E-04	9.782E-05	2.591	4.65	2.41	20.000	North Building Paved Roads Segment #1	
FUGI003	NBLDG5	PM10	24-hr	1	NA	497,414.920	4,991,170.000	281.510	7.76E-04	9.782E-05	2.591	4.65	2.41	20.000	North Building Paved Roads Segment #1	
FUGI003	NBLDG6	PM10	24-hr	1	NA	497,407.520	4,991,163.270	281.290	7.76E-04	9.782E-05	2.591	4.65	2.41	20.000	North Building Paved Roads Segment #1	
FUGI003	NBLDG7	PM10	24-hr	1	NA	497,400.130	4,991,156.540	281.110	7.76E-04	9.782E-05	2.591	4.65	2.41	20.000	North Building Paved Roads Segment #1	
FUGI003	NBLDG8	PM10	24-hr	1	NA	497,392.730	4,991,149.810	280.920	7.76E-04	9.782E-05	2.591	4.65	2.41	20.000	North Building Paved Roads Segment #1	
FUGI003	NBLDG9	PM10	24-hr	1	NA	497,385.340	4,991,143.080	280.700	7.76E-04	9.782E-05	2.591	4.65	2.41	20.000	North Building Paved Roads Segment #1	
FUGI003	NBLDG10	PM10	24-hr	1	NA	497,424.660	4,991,186.720	282.240	7.76E-04	9.782E-05	2.591	4.65	2.41	20.000	North Building Paved Roads Segment #1	
FUGI003	NBLDG11	PM10	24-hr	1	NA	497,416.160	4,991,184.850	282.670	7.76E-04	9.782E-05	2.591	4.65	2.41	20.000	North Building Paved Roads Segment #1	
FUGI003	NBLDG12	PM10	24-hr	1	NA	497,411.020	4,991,176.450	281.820	7.76E-04	9.782E-05	2.591	4.65	2.41	20.000	North Building Paved Roads Segment #1	
FUGI003	NBLDG13	PM10	24-hr	1	NA	497,437.240	4,991,342.900	283.360	3.51E-04	4.418E-05	2.591	4.65	2.41	20.000	North Building Paved Roads Segment #2	

FUGI003	NBLDG14	PM10	24-hr	1	NA	497,443.200	4,991,335.540	283.300	3.51E-04	4.418E-05	2.591	4.65	2.41	20.000	North Building Paved Roads Segment #2	
FUGI003	NBLDG15	PM10	24-hr	1	NA	497,451.650	4,991,330.180	283.170	3.51E-04	4.418E-05	2.591	4.65	2.41	20.000	North Building Paved Roads Segment #2	
FUGI003	NBLDG16	PM10	24-hr	1	NA	497,459.550	4,991,324.080	283.120	3.51E-04	4.418E-05	2.591	4.65	2.41	20.000	North Building Paved Roads Segment #2	

FUGI003	NBLDG17	PM10	24-hr	1	NA	497,467.240	4,991,317.680	283.040	3.51E-04	4.418E-05	2.591	4.65	2.41	20.000	North Building Paved Roads Segment #2	
FUGI003	NBLDG18	PM10	24-hr	1	NA	497,473.270	4,991,309.720	283.020	3.51E-04	4.418E-05	2.591	4.65	2.41	20.000	North Building Paved Roads Segment #2	
FUGI003	NBLDG19	PM10	24-hr	1	NA	497,479.350	4,991,301.780	283.000	3.51E-04	4.418E-05	2.591	4.65	2.41	20.000	North Building Paved Roads Segment #2	
FUGI003	NBLDG20	PM10	24-hr	1	NA	497,485.600	4,991,293.970	283.070	3.51E-04	4.418E-05	2.591	4.65	2.41	20.000	North Building Paved Roads Segment #2	
FUGI003	NBLDG21	PM10	24-hr	1	NA	497,491.840	4,991,286.160	283.010	3.51E-04	4.418E-05	2.591	4.65	2.41	20.000	North Building Paved Roads Segment #2	
FUGI003	NBLDG22	PM10	24-hr	1	NA	497,496.170	4,991,277.160	282.950	3.51E-04	4.418E-05	2.591	4.65	2.41	20.000	North Building Paved Roads Segment #2	
FUGI003	NBLDG23	PM10	24-hr	1	NA	497,500.400	4,991,268.100	282.860	3.51E-04	4.418E-05	2.591	4.65	2.41	20.000	North Building Paved Roads Segment #2	
FUGI003	SBLDG1	PM10	24-hr	1	NA	497,426.240	4,991,037.500	279.110	3.18E-04	4.009E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG2	PM10	24-hr	1	NA	497,435.790	4,991,040.460	279.310	3.18E-04	4.009E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG3	PM10	24-hr	1	NA	497,445.340	4,991,043.420	279.430	3.18E-04	4.009E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG4	PM10	24-hr	1	NA	497,454.890	4,991,046.380	279.650	3.18E-04	4.009E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG5	PM10	24-hr	1	NA	497,464.440	4,991,049.340	279.830	3.18E-04	4.009E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG6	PM10	24-hr	1	NA	497,474.000	4,991,052.300	279.880	3.18E-04	4.009E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG7	PM10	24-hr	1	NA	497,483.550	4,991,055.270	280.010	3.18E-04	4.009E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG8	PM10	24-hr	1	NA	497,493.100	4,991,058.230	280.180	3.18E-04	4.009E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG9	PM10	24-hr	1	NA	497,502.650	4,991,061.190	280.310	3.18E-04	4.009E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG10	PM10	24-hr	1	NA	497,512.200	4,991,064.150	280.320	3.18E-04	4.009E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG11	PM10	24-hr	1	NA	497,521.860	4,991,066.000	280.290	3.18E-04	4.009E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG12	PM10	24-hr	1	NA	497,531.800	4,991,064.900	280.270	3.18E-04	4.009E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG13	PM10	24-hr	1	NA	497,541.740	4,991,063.790	280.220	3.18E-04	4.009E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG14	PM10	24-hr	1	NA	497,549.690	4,991,057.890	280.260	3.18E-04	4.009E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG15	PM10	24-hr	1	NA	497,556.700	4,991,050.970	280.370	3.18E-04	4.009E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG16	PM10	24-hr	1	NA	497,561.650	4,991,042.280	280.440	3.18E-04	4.009E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG17	PM10	24-hr	1	NA	497,566.380	4,991,033.490	280.480	3.18E-04	4.009E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG18	PM10	24-hr	1	NA	497,569.440	4,991,023.970	280.620	3.18E-04	4.009E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG19	PM10	24-hr	1	NA	497,572.500	4,991,014.450	280.730	3.18E-04	4.009E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG20	PM10	24-hr	1	NA	497,575.560	4,991,004.930	280.740	3.18E-04	4.009E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG21	PM10	24-hr	1	NA	497,578.610	4,990,995.410	280.730	3.18E-04	4.009E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG22	PM10	24-hr	1	NA	497,581.670	4,990,985.890	280.730	3.18E-04	4.009E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG23	PM10	24-hr	1	NA	497,584.730	4,990,976.370	280.600	3.18E-04	4.009E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG24	PM10	24-hr	1	NA	497,587.790	4,990,966.840	280.410	3.18E-04	4.009E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG25	PM10	24-hr	1	NA	497,590.840	4,990,957.320	280.370	3.18E-04	4.009E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG26	PM10	24-hr	1	NA	497,593.900	4,990,947.800	280.390	2.44E-04	3.080E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #4	
FUGI003	SBLDG27	PM10	24-hr	1	NA	497,596.960	4,990,938.280	280.490	2.44E-04	3.080E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #4	
FUGI003	SBLDG28	PM10	24-hr	1	NA	497,600.020	4,990,928.760	280.500	2.44E-04	3.080E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #4	
FUGI003	SBLDG29	PM10	24-hr	1	NA	497,603.070	4,990,919.240	280.660	2.44E-04	3.080E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #4	
FUGI003	SBLDG30	PM10	24-hr	1	NA	497,606.130	4,990,909.720	280.860	2.44E-04	3.080E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #4	
FUGI003	SBLDG31	PM10	24-hr	1	NA	497,609.190	4,990,900.200	280.910	1.78E-04	2.248E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG32	PM10	24-hr	1	NA	497,610.960	4,990,890.610	280.910	1.78E-04	2.248E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG33	PM10	24-hr	1	NA	497,606.680	4,990,882.390	281.170	1.78E-04	2.248E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG34	PM10	24-hr	1	NA	497,598.180	4,990,877.120	281.310	1.78E-04	2.248E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG35	PM10	24-hr	1	NA	497,589.510	4,990,872.220	281.220	1.78E-04	2.248E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG36	PM10	24-hr	1	NA	497,580.010	4,990,869.070	281.170	1.78E-04	2.248E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG37	PM10	24-hr	1	NA	497,570.520	4,990,865.920	281.040	1.78E-04	2.248E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG38	PM10	24-hr	1	NA	497,561.030	4,990,862.780	280.950	1.78E-04	2.248E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG39	PM10	24-hr	1	NA	497,551.540	4,990,859.630	280.720	1.78E-04	2.248E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG40	PM10	24-hr	1	NA	497,542.050	4,990,856.480	280.590	1.78E-04	2.248E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG41	PM10	24-hr	1	NA	497,532.560	4,990,853.330	280.530	1.78E-04	2.248E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG42	PM10	24-hr	1	NA	497,523.060	4,990,850.180	280.550	1.78E-04	2.248E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG43	PM10	24-hr	1	NA	497,513.450	4,990,849.290	280.530	1.78E-04	2.248E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG44	PM10	24-hr	1	NA	497,503.810	4,990,851.780	280.500	1.78E-04	2.248E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG45	PM10	24-hr	1	NA	497,494.750	4,990,855.560	280.510	1.78E-04	2.248E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG46	PM10	24-hr	1	NA	497,485.140	4,990,852.820	280.470	1.78E-04	2.248E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG47	PM10	24-hr	1	NA	497,564.360	4,990,944.840	281.030	4.22E-04	5.317E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #3	
FUGI003	SBLDG48	PM10	24-hr	1	NA	497,573.840	4,990,948.000	280.920	4.22E-04	5.317E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #3	
FUGI003	SBLDG49	PM10	24-hr	1	NA	497,583.330	4,990,951.170	280.620	4.22E-04	5.317E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #3	
FUGI003	SBLDG50	PM10	24-hr	1	NA	497,580.960	4,990,897.970	281.110	4.22E-04	5.317E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #2	
FUGI003	SBLDG51	PM10	24-hr	1	NA	497,590.410	4,990,901.260	281.310	4.22E-04	5.317E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #2	
FUGI003	SBLDG52	PM10	24-hr	1	NA	497,599.850	4,990,904.550	281.310	4.22E-04	5.317E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #2	
FUGI003	NBLDG1	PM2.5	24-hr, Annual	1	NA	497444.500	4991196.930	282.040	1.91E-04	2.401E-05	2.591	4.651	2.410	20.000	North Building Paved Roads Segment #1	
FUGI003	NBLDG2	PM2.5	24-hr, Annual	1	NA	497437.110	4991190.200	282.090	1.91E-04	2.401E-05	2.591	4.651	2.410	20.000	North Building Paved Roads Segment #1	
FUGI003	NBLDG3	PM2.5	24-hr, Annual	1	NA	497429.710	4991183.470	281.840	1.91E-04	2.401E-05	2.591	4.651	2.410	20.000	North Building Paved Roads Segment #1	
FUGI003	NBLDG4	PM2.5	24-hr, Annual	1	NA	497422.320	4991176.740	281.760	1.91E-04	2.401E-05	2.591	4.651	2.410	20.000	North Building Paved Roads Segment #1	
FUGI003	NBLDG5	PM2.5	24-hr, Annual	1	NA	497414.920	4991170.000	281.510	1.91E-04	2.401E-05	2.591	4.651	2.410	20.000	North Building Paved Roads Segment #1	
FUGI003	NBLDG6	PM2.5	24-hr, Annual	1	NA	497407.520	4991163.270	281.290	1.91E-04	2.401E-05	2.591	4.651	2.410	20.000	North Building Paved Roads Segment #1	
FUGI003	NBLDG7	PM2.5	24-hr, Annual	1	NA	497400.130	4991156.540	281.110	1.91E-04	2.401E-05	2.591	4.651	2.410	20.000	North Building Paved Roads Segment #1	
FUGI003	NBLDG8	PM2.5	24-hr, Annual	1	NA	497392.730	4991149.810	280.920	1.91E-04	2.401E-05	2.591	4.651	2.410	20.000	North Building Paved Roads Segment #1	
FUGI003	NBLDG9	PM2.5	24-hr, Annual	1	NA	497385.340	4991143.080	280.700	1.91E-04	2.401E-05	2.591	4.651	2.410	20.000	North Building Paved Roads Segment #1	
FUGI003	NBLDG10	PM2.5	24-hr, Annual	1	NA	497424.660	4991186.720	282.240	1.91E-04	2.401E-05	2.591	4.651	2.410	20.000	North Building Paved Roads Segment #1	
FUGI003	NBLDG11	PM2.5	24-hr, Annual	1	NA	497416.160	4991184.850	282.670	1.91E-04	2.401E-05	2.591	4.651	2.410	20.000	North Building Paved Roads Segment #1	
FUGI003	NBLDG12	PM2.5	24-hr, Annual	1	NA	497411.020	4991176.450	281.820	1.91E-04	2.401E-05	2.591	4.651	2.410	20.000	North Building Paved Roads Segment #1	
FUGI003	NBLDG13	PM2.5	24-hr, Annual	1	NA	497437.240	4991342.900	283.360	8.61E-05	1.084E-05	2.591	4.651	2.410	20.000	North Building Paved Roads Segment #2	
FUGI003	NBLDG14	PM2.5	24-hr, Annual	1	NA	497443.200	4991335.540	283.300	8.61E-05	1.084E-05	2.591	4.651	2.410	20.000	North Building Paved Roads Segment #2	
FUGI003	NBLDG15	PM2.5	24-hr, Annual	1	NA	497451.650	4991330.180	283.170	8.61E-05	1.084E-05	2.591	4.651	2.410	20.000	North Building Paved Roads Segment #2	

FUGI003	NBLDG16	PM2.5	24-hr, Annual	1	NA	497459.550	4991324.080	283.120	8.61E-05	1.084E-05	2.591	4.651	2.410	20.000	North Building Paved Roads Segment #2	
FUGI003	NBLDG17	PM2.5	24-hr, Annual	1	NA	497467.240	4991317.680	283.040	8.61E-05	1.084E-05	2.591	4.651	2.410	20.000	North Building Paved Roads Segment #2	

FUGI003	NBLDG18	PM2.5	24-hr, Annual	1	NA	497473.270	4991309.720	283.020	8.61E-05	1.084E-05	2.591	4.651	2.410	20.000	North Building Paved Roads Segment #2	
FUGI003	NBLDG19	PM2.5	24-hr, Annual	1	NA	497479.350	4991301.780	283.000	8.61E-05	1.084E-05	2.591	4.651	2.410	20.000	North Building Paved Roads Segment #2	
FUGI003	NBLDG20	PM2.5	24-hr, Annual	1	NA	497485.600	4991293.970	283.070	8.61E-05	1.084E-05	2.591	4.651	2.410	20.000	North Building Paved Roads Segment #2	
FUGI003	NBLDG21	PM2.5	24-hr, Annual	1	NA	497491.840	4991286.160	283.010	8.61E-05	1.084E-05	2.591	4.651	2.410	20.000	North Building Paved Roads Segment #2	
FUGI003	NBLDG22	PM2.5	24-hr, Annual	1	NA	497496.170	4991277.160	282.950	8.61E-05	1.084E-05	2.591	4.651	2.410	20.000	North Building Paved Roads Segment #2	
FUGI003	NBLDG23	PM2.5	24-hr, Annual	1	NA	497500.400	4991268.100	282.860	8.61E-05	1.084E-05	2.591	4.651	2.410	20.000	North Building Paved Roads Segment #2	
FUGI003	SBLDG1	PM2.5	24-hr, Annual	1	NA	497426.240	4991037.500	279.110	7.81E-05	9.841E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG2	PM2.5	24-hr, Annual	1	NA	497435.790	4991040.460	279.310	7.81E-05	9.841E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG3	PM2.5	24-hr, Annual	1	NA	497445.340	4991043.420	279.430	7.81E-05	9.841E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG4	PM2.5	24-hr, Annual	1	NA	497454.890	4991046.380	279.650	7.81E-05	9.841E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG5	PM2.5	24-hr, Annual	1	NA	497464.440	4991049.340	279.830	7.81E-05	9.841E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG6	PM2.5	24-hr, Annual	1	NA	497474.000	4991052.300	279.880	7.81E-05	9.841E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG7	PM2.5	24-hr, Annual	1	NA	497483.550	4991055.270	280.010	7.81E-05	9.841E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG8	PM2.5	24-hr, Annual	1	NA	497493.100	4991058.230	280.180	7.81E-05	9.841E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG9	PM2.5	24-hr, Annual	1	NA	497502.650	4991061.190	280.310	7.81E-05	9.841E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG10	PM2.5	24-hr, Annual	1	NA	497512.200	4991064.150	280.320	7.81E-05	9.841E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG11	PM2.5	24-hr, Annual	1	NA	497521.860	4991066.000	280.290	7.81E-05	9.841E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG12	PM2.5	24-hr, Annual	1	NA	497531.800	4991064.900	280.270	7.81E-05	9.841E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG13	PM2.5	24-hr, Annual	1	NA	497541.740	4991063.790	280.220	7.81E-05	9.841E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG14	PM2.5	24-hr, Annual	1	NA	497549.690	4991057.890	280.260	7.81E-05	9.841E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG15	PM2.5	24-hr, Annual	1	NA	497556.700	4991050.970	280.370	7.81E-05	9.841E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG16	PM2.5	24-hr, Annual	1	NA	497561.650	4991042.280	280.440	7.81E-05	9.841E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG17	PM2.5	24-hr, Annual	1	NA	497566.380	4991033.490	280.480	7.81E-05	9.841E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG18	PM2.5	24-hr, Annual	1	NA	497569.440	4991023.970	280.620	7.81E-05	9.841E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG19	PM2.5	24-hr, Annual	1	NA	497572.500	4991014.450	280.730	7.81E-05	9.841E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG20	PM2.5	24-hr, Annual	1	NA	497575.560	4991004.930	280.740	7.81E-05	9.841E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG21	PM2.5	24-hr, Annual	1	NA	497578.610	4990995.410	280.730	7.81E-05	9.841E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG22	PM2.5	24-hr, Annual	1	NA	497581.670	4990985.890	280.730	7.81E-05	9.841E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG23	PM2.5	24-hr, Annual	1	NA	497584.730	4990976.370	280.600	7.81E-05	9.841E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG24	PM2.5	24-hr, Annual	1	NA	497587.790	4990966.840	280.410	7.81E-05	9.841E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG25	PM2.5	24-hr, Annual	1	NA	497590.840	4990957.320	280.370	7.81E-05	9.841E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #5	
FUGI003	SBLDG26	PM2.5	24-hr, Annual	1	NA	497593.900	4990947.800	280.390	6.00E-05	7.561E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #4	
FUGI003	SBLDG27	PM2.5	24-hr, Annual	1	NA	497596.960	4990938.280	280.490	6.00E-05	7.561E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #4	
FUGI003	SBLDG28	PM2.5	24-hr, Annual	1	NA	497600.020	4990928.760	280.500	6.00E-05	7.561E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #4	
FUGI003	SBLDG29	PM2.5	24-hr, Annual	1	NA	497603.070	4990919.240	280.660	6.00E-05	7.561E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #4	
FUGI003	SBLDG30	PM2.5	24-hr, Annual	1	NA	497606.130	4990909.720	280.860	6.00E-05	7.561E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #4	
FUGI003	SBLDG31	PM2.5	24-hr, Annual	1	NA	497609.190	4990900.200	280.910	4.38E-05	5.517E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG32	PM2.5	24-hr, Annual	1	NA	497610.960	4990890.610	280.910	4.38E-05	5.517E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG33	PM2.5	24-hr, Annual	1	NA	497606.680	4990882.390	281.170	4.38E-05	5.517E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG34	PM2.5	24-hr, Annual	1	NA	497598.180	4990877.120	281.310	4.38E-05	5.517E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG35	PM2.5	24-hr, Annual	1	NA	497589.510	4990872.220	281.220	4.38E-05	5.517E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG36	PM2.5	24-hr, Annual	1	NA	497580.010	4990869.070	281.170	4.38E-05	5.517E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG37	PM2.5	24-hr, Annual	1	NA	497570.520	4990865.920	281.040	4.38E-05	5.517E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG38	PM2.5	24-hr, Annual	1	NA	497561.030	4990862.780	280.950	4.38E-05	5.517E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG39	PM2.5	24-hr, Annual	1	NA	497551.540	4990859.630	280.720	4.38E-05	5.517E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG40	PM2.5	24-hr, Annual	1	NA	497542.050	4990856.480	280.590	4.38E-05	5.517E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG41	PM2.5	24-hr, Annual	1	NA	497532.560	4990853.330	280.530	4.38E-05	5.517E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG42	PM2.5	24-hr, Annual	1	NA	497523.060	4990850.180	280.550	4.38E-05	5.517E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG43	PM2.5	24-hr, Annual	1	NA	497513.450	4990849.290	280.530	4.38E-05	5.517E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG44	PM2.5	24-hr, Annual	1	NA	497503.810	4990851.780	280.500	4.38E-05	5.517E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG45	PM2.5	24-hr, Annual	1	NA	497494.750	4990855.560	280.510	4.38E-05	5.517E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG46	PM2.5	24-hr, Annual	1	NA	497485.140	4990852.820	280.470	4.38E-05	5.517E-06	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #1	
FUGI003	SBLDG47	PM2.5	24-hr, Annual	1	NA	497564.360	4990944.840	281.030	1.04E-04	1.305E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #3	
FUGI003	SBLDG48	PM2.5	24-hr, Annual	1	NA	497573.840	4990948.000	280.920	1.04E-04	1.305E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #3	
FUGI003	SBLDG49	PM2.5	24-hr, Annual	1	NA	497583.330	4990951.170	280.620	1.04E-04	1.305E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #3	
FUGI003	SBLDG50	PM2.5	24-hr, Annual	1	NA	497580.960	4990897.970	281.110	1.04E-04	1.305E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #2	
FUGI003	SBLDG51	PM2.5	24-hr, Annual	1	NA	497590.410	4990901.260	281.310	1.04E-04	1.305E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #2	
FUGI003	SBLDG52	PM2.5	24-hr, Annual	1	NA	497599.850	4990904.550	281.310	1.04E-04	1.305E-05	2.628	4.651	2.444	20.000	South Building Paved Roads Segment #2	

Notes:

1. Release height is equal to the height of the building

2. Volume Source Characterization from AERMOD User Guide

Type	Int Lateral Dimen.	Int Vertical Dimen.
Volume 1	Single Source **Length/4.3**	Surface Based **Vertical dim/2.15**
Volume 2	Single Source **Length/4.3**	Elevated on or adjacent to a structure **Structure height/2.15**
Volume 3	Single Source **Length/4.3**	Elevated not on or adjacent **Vertical dim/4.3**

MINNESOTA POLLUTION CONTROL AGENCY

520 Lafayette Road North
St. Paul, MN 55155-4194

AQDM-02

Air Quality Dispersion Modeling (AQDM) protocol spreadsheet

(Previously AQDMPS-01)

Doc Type: Air Dispersion Modeling

Note: Permit applicants may create their own spreadsheet tabs.

AQ Facility ID number:	12300341
Facility name:	Water Gremlin Company
Facility address:	4400 Otter Lake Road
Facility contact:	Mary Gail Scott

Permit ID	AERM ID	Emission unit	Pollutant	Operating scenario #	Operating scenario Description	Description	ghput	Throughput units	Emission factor	Emission factor units	Emission factors references/Assumptions/Equations
SV001	FAC	EU001	NO_2	1	running 24 hours / 7days	Emergency Power Generator Concentrator - Diesel			0.01	lb/hp-hr	1,200 kW capacity provided by vendor x 1.341 hp/kW = 1,609 hp lb/hp-hr emission factors from AP-42 'Large Stationary Diesel And All Stationary Dual-fuel Engines' (10/96)Table 3.4.1 SO2: 0.00809 x S lb/hp-hr; Assume diesel fuel sulfur content (S) of 0.05% = 4.045E-4 lb SO2/hp-hr
SV001	FAC	EU002	NO_2	2	testing scenario: run for 1-hr between noon and 4 pm.	Emergency Power Generator Concentrator - Diesel			0.01	lb/hp-hr	1,200 kW capacity provided by vendor x 1.341 hp/kW = 1,609 hp lb/hp-hr emission factors from AP-42 'Large Stationary Diesel And All Stationary Dual-fuel Engines' (10/96)Table 3.4.1 SO2: 0.00809 x S lb/hp-hr; Assume diesel fuel sulfur content (S) of 0.05% = 4.045E-4 lb SO2/hp-hr

Emission Calculations Table

Permit ID	AERMOD ID	Emission unit	Pollutant	Operating scenario #	Operating scenario Description	Description	Throughput	Throughput units	Emission factor	Emission factor units	Emission factors references/Assumptions/Equations
See attached emission calculations											

CAS # or MPCA #	Chemical Name	STRU1		STRU73											
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
202-94-8	11H-Benz[b,c]aceanthrylene														
202-98-2	4H-Cyclopenta[d,e,f]chrysene														
75-07-0	Acetaldehyde														
60-35-5	Acetamide														
67-64-1	Acetone														
75-86-5	Acetone Cyanohydrin														
75-05-8	Acetonitrile														
53-96-3	Acetylaminofluorene, 2-														
107-02-8	Acrolein														
79-06-1	Acrylamide														
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-nitro-2-furyl)-														
79-10-7	Acrylic acid														
107-13-1	Acrylonitrile														
111-69-3	Adiponitrile														
ALDEHYD	Aldehydes														
309-00-2	Aldrin														
ALIPHATI	Aliphatic Hydrocarbon Streams (Midrange)														
107-05-1	Allyl chloride														
7429-90-5	Aluminum														
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazol, 2-														
6109-97-3	Amino-9-ethylcarbazolehydrochloride, 3-														
117-79-3	Aminoanthraquinone, 2-														
7664-41-7	Ammonia														
62-53-3	Aniline														
191-26-4	Anthanthrene														
7440-36-0	Antimony														
ANTIMON	Antimony Compounds														
1309-64-4	Antimony trioxide														
140-57-8	Aramite														
7440-38-2	Arsenic														
ARSENIC-	Arsenic Compounds														
1327-53-3	Arsenic Trioxide														
7784-42-1	Arsine														
1332-21-4	Asbestos (units in fibers)														
1332-21-4-	Asbestos, Libby Amphibole (units in fibers)														
123-77-3	Azodicarbonamide														
10294-40-3	Barium Chromate														
199-54-2	Benz[e]aceanthrylene														
202-33-5	Benz[j]aceanthrylene														

211-91-6	Benz[l]aceanthrylene														
71-43-2	Benzene														

CAS # or MPCA #	Chemical Name	STRU1		STRU73											
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
92-87-5	Benzidine														
205-82-3	Benzo(j)fluoranthene														
207-08-9	Benzo(k)fluoranthene														
56-55-3	Benzo[a]anthracene														
50-32-8	Benzo[a]pyrene														
205-99-2	Benzo[b]fluoranthene														
205-12-9	Benzo[c]fluorene														
191-24-2	Benzo[g,h,i]perylene														
65-85-0	Benzoic Acid														
100-44-7	Benzyl chloride														
7440-41-7	Beryllium														
BERYLLIU	Beryllium Compounds														
13510-49-1	Beryllium sulfate														
111-44-4	Bis(2-chloroethyl)ether														
117-81-7	Bis(2-ethylhexyl)phthalate (DEHP)														
542-88-1	Bis(chloromethyl)ether														
7440-42-8	Boron And Borates Only														
10294-34-5	Boron Trichloride														
7637-07-2	Boron Trifluoride														
108-86-1	Bromobenzene														
74-97-5	Bromochloromethane														
75-27-4	Bromodichloromethane														
75-25-2	Bromoform														
74-83-9	Bromomethane														
106-94-5	Bromopropane, 1-														
106-99-0	Butadiene, 1,3-														
78-92-2	Butyl alcohol, sec-														
111-76-2	Butyl Cellosolve (ethylene glycol monobutyl ether)														
25013-16-5	Butylated hydroxyanisole														
3068-88-0	Butyrolactone, beta-														
7440-43-9	Cadmium														
CADMIUM	Cadmium Compounds														
13765-19-0	Calcium Chromate														
105-60-2	Caprolactum														
75-15-0	Carbon disulfide														
630-08-0	Carbon Monoxide														
56-23-5	Carbon tetrachloride														
463-58-1	Carbonyl sulfide														
111-15-9	Cellosolve Acetate (ethylene glycol monoethyl ether acetate)														

1306-38-3	Cerium Oxide and Cerium Compounds														
12789-03-6	Chlordane or (57-74-9)														

CAS # or MPCA #	Chemical Name	STRU1		STRU73											
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
115-28-6	Chlorendic acid														
108171-26	Chlorinated Paraffins (C12, 60% Chlorine)														
7782-50-5	Chlorine														
10049-04-4	Chlorine Oxide (CLO2)														
75-68-3	Chloro-1,1-difluoroethane, 1- (HCFC-142b)														
563-47-3	Chloro-2-methylpropene, 3-														
95-83-0	Chloro-o-phenylenediamine, 4-														
95-69-2	Chloro-o-toluidine, p-														
532-27-4	Chloroacetophenone, 2-														
108-90-7	Chlorobenzene														
98-56-6	Chlorobenzotrifluoride, 4-														
75-45-6	Chlorodifluoromethane (HCFC-22)														
67-66-3	Chloroform														
107-30-2	Chloromethyl Methyl Ether														
88-73-3	Chloronitrobenzene, o-														
100-00-5	Chloronitrobenzene, p-														
76-06-2	Chloropicrin														
126-99-8	Chloroprene														
1333-82-0	Chromic acid mists and dissolved Cr(VI) aerosols														
7440-47-3	Chromium														
18540-29-9	Chromium (Hexavalent)														
18540-29-9	Chromium (Hexavalent) - Particulate														
CHROM-C	Chromium Compounds														
16065-83-1	Chromium(III) Compounds														
218-01-9	Chrysene (Benzo(a)phenanthrene)														
87-29-6	Cinnamyl anthranilate														
10061-01-5	cis-1,3-Dichloropropene														
8007-45-2	Coal Tar														
7440-48-4	Cobalt														
0-00-7	Coke Oven Emissions														
7440-50-8	Copper														
COPPER-	Copper Compounds														
120-71-8	Cresidine, p-														
108-39-4	Cresol, m-														
95-48-7	Cresol, o-														
106-44-5	Cresol, p-														
1319-77-3	Cresols/Cresylic acid (isomers and mixture)														
98-82-8	Cumene														
135-20-6	Cupferron														

57-12-5	Cyanide (Cyanide ion, Inorganic cyanides, Isocyanide)														
CYANIDE-	Cyanide Compounds														

CAS # or MPCA #	Chemical Name	STRU1		STRU73											
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
110-82-7	Cyclohexane														
108-94-1	Cyclohexanone														
27208-37-3	Cyclopenta[c,d]pyrene														
50-29-3	DDT														
615-05-4	Diaminoanisole, 2,4-														
101-80-4	Diaminodiphenyl ether, 4,4-														
103-33-3	Diazene, Diphenyl														
226-36-8	Dibenz(a,h)acridine														
224-42-0	Dibenz(a,j)acridine														
53-70-3	Dibenz[a,h]anthracene														
192-65-4	Dibenzo(a,e)pyrene														
189-64-0	Dibenzo(a,h)pyrene														
191-30-0	Dibenzo(a,l)pyrene														
194-59-2	Dibenzo(c,g)carbazole, 7H-														
5385-75-1	Dibenzo[a,e]fluoranthene														
189-55-9	Dibenzo[a,i]pyrene														
96-12-8	Dibromo-3-chloropropane, 1,2-														
764-41-0	Dichloro-2-butene, 1,4-														
1476-11-5	Dichloro-2-butene, cis-1,4-														
106-46-7	Dichlorobenzene(p), 1,4-														
25321-22-6	Dichlorobenzenes														
91-94-1	Dichlorobenzidene, 3,3-														
75-71-8	Dichlorodifluoromethane (CFC-12)														
75-35-4	Dichloroethylene (1,1-) (Vinylidene chloride)														
156-60-5	Dichloroethylene, trans-1,2-			17.35	76.00										
542-75-6	Dichloropropene, 1,3-														
78-88-6	Dichloropropene, 2,3-														
62-73-7	Dichlorvos														
77-73-6	Dicyclopentadiene														
60-57-1	Dieldrin														
0-02-4	Diesel exhaust particulate														
111-42-2	Diethanolamine														
112-34-5	Diethylene Glycol Monobutyl Ether														
111-90-0	Diethylene Glycol Monoethyl Ether														
75-37-6	Difluoroethane, 1,1-														
108-20-3	Diisopropyl Ether														
60-11-7	Dimethyl aminoazobenzene														
68-12-2	Dimethyl formamide														
108-01-0	Dimethylamino ethanol, 2-														

57-97-6	Dimethylbenz[a]anthracene, 7,12-														
57-14-7	Dimethylhydrazine, 1,1-														

CAS # or MPCA #	Chemical Name	STRU1		STRU73											
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
42397-64-8	Dinitropyrene, 1,6- (BaP)														
42397-65-9	Dinitropyrene, 1,8- (BaP)														
121-14-2	Dinitrotoluene, 2,4-														
123-91-1	Dioxane, 1,4- (1,4-Diethylene dioxide)														
122-66-7	Diphenylhydrazine, 1,2-														
106-89-8	Epichlorohydrin (l-Chloro-2,3-epoxypropane)														
106-88-7	Epoxybutane, 1,2-														
110-80-5	Ethoxyethanol, 2- (ethylene glycol monoethyl ether)														
141-78-6	Ethyl acetate														
140-88-5	Ethyl Acrylate														
100-41-4	Ethyl benzene														
51-79-6	Ethyl carbamate (Urethane)														
75-00-3	Ethyl chloride (Chloroethane)														
97-63-2	Ethyl Methacrylate														
106-93-4	Ethylene dibromide (Dibromoethane)														
107-06-2	Ethylene dichloride (1,2-Dichloroethane)														
107-21-1	Ethylene glycol														
75-21-8	Ethylene oxide														
96-45-7	Ethylene thiourea														
75-34-3	Ethylidene dichloride (1,1-Dichloroethane)														
206-44-0	Fluoranthene														
FLUORIDE	Fluorides (except hydrogen fluoride)														
50-00-0	Formaldehyde														
64-18-6	Formic Acid														
111-30-8	Glutaraldehyde														
0-01-2	Glycol ethers														
76-44-8	Heptachlor														
1024-57-3	Heptachlor epoxide														
35822-46-9	Heptachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8-														
00-08-5	Heptachlorodibenzodioxin, All Isomers														
67562-39-4	Heptachlorodibenzofuran, 1,2,3,4,6,7,8-														
55673-89-7	Heptachlorodibenzofuran, 1,2,3,4,7,8,9-														
00-08-4	Heptachlorodibenzofuran, All Isomers														
142-82-5	Heptane, N														
118-74-1	Hexachlorobenzene														
87-68-3	Hexachlorobutadiene														
608-73-1	Hexachlorocyclohexane (technical grade)														
319-84-6	Hexachlorocyclohexane, alpha-														
319-85-7	Hexachlorocyclohexane, beta-1,2,3,4,5,6-														

77-47-4	Hexachlorocyclopentadiene														
39227-28-6	Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-														

CAS # or MPCA #	Chemical Name	STRU1		STRU73											
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
57653-85-7	Hexachlorodibenzo-p-dioxin, 1,2,3,6,7,8-														
19408-74-3	Hexachlorodibenzo-p-dioxin, 1,2,3,7,8,9-														
00-08-3	Hexachlorodibenzodioxins, All Isomers														
70648-26-9	Hexachlorodibenzofuran, 1,2,3,4,7,8-														
57117-44-9	Hexachlorodibenzofuran, 1,2,3,6,7,8-														
72918-21-9	Hexachlorodibenzofuran, 1,2,3,7,8,9-														
60851-34-5	Hexachlorodibenzofuran, 2,3,4,6,7,8-														
00-08-2	Hexachlorodibenzofurans, All Isomers														
67-72-1	Hexachloroethane														
822-06-0	Hexamethylene-1,6-diisocyanate														
110-54-3	Hexane														
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl-1-hexanol)														
591-78-6	Hexanone-2														
302-01-2	Hydrazine														
10034-93-2	Hydrazine sulfate														
7647-01-0	Hydrochloric acid (hydrogen chloride)														
74-90-8	Hydrogen cyanide														
7664-39-3	Hydrogen fluoride (Hydrofluoric acid)														
7783-07-5	Hydrogen selenide														
7783-06-4	Hydrogen sulfide														
193-39-5	Indeno(1,2,3-cd)pyrene														
5888-33-5	Isobornyl acrylate			0.245021	1.073191										
78-59-1	Isophorone														
67-63-0	Isopropyl alcohol														
7439-92-1	Lead	0.000123693	0.000541776												
7758-97-6	Lead Chromate														
LEAD-CO	Lead Compounds														
58-89-9	Lindane (all isomers)														
108-31-6	Maleic anhydride														
7439-96-5	Manganese														
MANGANE	Manganese Compounds														
7439-97-6	Mercury (elemental)														
MERCURY	Mercury Compounds														
126-98-7	Methacrylonitrile														
67-56-1	Methanol														
109-86-4	Methoxyethanol, 2- (ethylene glycol monomethyl ether EGME)														
96-33-3	Methyl acrylate														
110-49-6	Methyl Cellosolve Acetate														
74-87-3	Methyl chloride (Chloromethane)														

71-55-6	Methyl chloroform (1,1,1-Trichloroethane)														
78-93-3	Methyl ethyl ketone (2-Butanone)														

CAS # or MPCA #	Chemical Name	STRU1		STRU73											
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
60-34-4	Methyl Hydrazine														
108-10-1	Methyl isobutyl ketone (Hexone)														
624-83-9	Methyl isocyanate														
80-62-6	Methyl methacrylate														
1634-04-4	Methyl tert butyl ether														
56-49-5	Methylcholanthrene, 3-														
3697-24-3	Methylchrysene, 5-														
101-14-4	Methylene bis(2-chloroaniline), 4,4-														
74-95-3	Methylene Bromide														
75-09-2	Methylene chloride (Dichloromethane)														
101-68-8	Methylene diphenyl diisocyanate (MDI)														
101-77-9	Methylenedianiline, 4,4-														
90-94-8	Michler's ketone														
10595-95-6	N- Nitrosomethylethylamine														
924-16-3	N-Nitrosodi-n-butylamine														
621-64-7	N-Nitrosodi-n-propylamine														
55-18-5	N-Nitrosodiethylamine														
62-75-9	N-Nitrosodimethylamine														
86-30-6	N-Nitrosodiphenylamine														
59-89-2	N-Nitrosomorpholine														
100-75-4	N-Nitrosopiperidine														
111-84-2	N-Nonane														
64724-95-6	Naphtha, High Flash Aromatic (HFAN)														
91-20-3	Naphthalene														
193-09-9	Naphtho[2,3-e]pyrene														
7440-02-0	Nickel														
NICKEL-C	Nickel Compounds														
1313-99-1	Nickel oxide														
0-02-5	Nickel refinery dust from the pyrometallurgical process														
12035-72-2	Nickel sulfide (NI3S2)														
7697-37-2	Nitric acid														
139-13-9	Nitrilotriacetic acid														
18662-53-8	Nitrilotriacetic acid, trisodium salt monohydrate														
602-87-9	Nitroacenaphthene, 5-														
88-74-4	Nitroaniline, 2-														
100-01-6	Nitroaniline, 4-														
98-95-3	Nitrobenzene														
7496-02-8	Nitrochrysene, 6-														
607-57-8	Nitrofluorene, 2-														

10102-44-0	Nitrogen dioxide (NO2)														
75-52-5	Nitromethane														

CAS # or MPCA #	Chemical Name	STRU1		STRU73											
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
79-46-9	Nitropropane, 2-														
5522-43-0	Nitropyrene, 1-														
57835-92-4	Nitropyrene, 4-														
156-10-5	Nitrosodiphenylamine, p-														
3268-87-9	Octachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8,9-														
39001-02-0	Octachlorodibenzofuran, 1,2,3,4,6,7,8,9-														
10028-15-6	Ozone														
74472-37-0	PCB 114 (2,3,4,4,5 Pentachlorobiphenyl)														
31508-00-6	PCB 118 (2,3,4,4,5 Pentachlorobiphenyl)														
65510-44-3	PCB 123 (2,3,4,4,5 Pentachlorobiphenyl)														
57465-28-8	PCB 126 (3,3,4,4,5 Pentachlorobiphenyl)														
38380-080	PCB 156 (2,3,3,4,4,5 Hexachlorobiphenyl)														
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexachlorobiphenyl)														
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexachlorobiphenyl)														
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexachlorobiphenyl)														
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Heptachlorobiphenyl)														
32598-13-3	PCB 77 (3,3,4,4-Tetrachlorobiphenyl)														
70362-50-4	PCB 81 (3,4,4,5 Tetrachlorobiphenyl)														
32598-14-4	PCB105 (2,3,3,4,4 Pentachlorobiphenyl)														
40321-76-4	Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-														
00-08-1	Pentachlorodibenzodioxins, All Isomers														
57117-41-6	Pentachlorodibenzofuran, 1,2,3,7,8-														
57117-31-4	Pentachlorodibenzofuran, 2,3,4,7,8-														
00-09-0	Pentachlorodibenzofurans, All Isomers														
87-86-5	Pentachlorophenol														
109-66-0	Pentane, n-														
ALIPHATI	Petroleum Hydrocarbons, Aliphatic Low (C5 - C8)														
ALIPHATI	Petroleum Hydrocarbons, Aliphatic Medium (C9 - C18)														
AROMATI	Petroleum Hydrocarbons, Aromatic Low (C6 - C8; EC6-EC8)														
AROMATI	Petroleum Hydrocarbons, Aromatic Medium (C9 - C16; EC9-EC21)														
85-01-8	Phenanthrene														
108-95-2	Phenol														
75-44-5	Phosgene														
7803-51-2	Phosphine														
7664-38-2	Phosphoric acid														
85-44-9	Phthalic anhydride														
59536-65-1	Polybrominated Biphenyls														
1336-36-3	Polychlorinated biphenyls (Aroclors unspeciated)														
00-08-0	Polychlorinated Dibenzo-P-Dioxins And Furans, Total														

00-05-0	Polychlorinated Dibenzodioxins, Total														
00-05-1	Polychlorinated Dibenzofurans, Total														

CAS # or MPCA #	Chemical Name	STRU1		STRU73											
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
130498-29	Polycyclic Aromatic Hydrocarbons (PAH)														
00-01-7	Polycyclic Organic Matter (POM)														
9016-87-9	Polymeric diphenylmethane diisocyanate														
7758-01-2	Potassium bromate														
1120-71-4	Propane sultone, 1,3-														
57-57-8	Propiolactone, beta-														
123-38-6	Propionaldehyde														
115-07-1	Propylene														
78-87-5	Propylene dichloride (1,2-Dichloropropane)														
107-98-2	Propylene Glycol Monomethyl Ether														
75-56-9	Propylene oxide														
930-55-2	Pyrrolidine, 1-Nitroso-														
7782-49-2	Selenium														
0-01-9	Selenium Compounds														
7631-86-9	Silica (crystalline, respirable, PM4)														
1310-73-2	Sodium hydroxide														
10588-01-9	Sodium Dichromate														
7789-06-2	Strontium chromate														
100-42-5	Styrene														
96-09-3	Styrene oxide														
14808-79-8	Sulfates														
126-33-0	Sulfolane														
7446-09-5	Sulfur dioxide														
7664-93-9	Sulfuric acid (aerosol forms only)														
8014-95-7	Sulfuric Acid mixture w. sulfur trioxide (oleum)														
00-09-1	TCDD Eqivalents, 2,3,7,8-														
540-88-5	Tert-Butyl Acetate														
1746-01-6	Tetrachlorodibenzo-p-dioxin, 2,3,7,8-														
00-08-8	Tetrachlorodibenzodioxins, All Isomers														
51207-31-9	Tetrachlorodibenzofuran, 2,3,7,8-														
00-08-6	Tetrachlorodibenzofurans, All Isomers														
630-20-6	Tetrachloroethane, 1,1,1,2-														
79-34-5	Tetrachloroethane, 1,1,2,2-														
127-18-4	Tetrachloroethylene (Perchloroethylene)														
811-97-2	Tetrafluoroethane, 1,1,1,2-														
109-99-9	Tetrahydrofuran														
62-55-5	Thioacetamide														
62-56-6	Thiourea														
108-88-3	Toluene														

584-84-9	Toluene-2,4-diisocyanate														
91-08-7	Toluene-2,6-diisocyanate														

CAS # or MPCA #	Chemical Name	STRU1		STRU73											
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
95-80-7	Toluene diamine, 2,4-														
26471-62-5	Toluenediisocyanate (mixed isomers)														
95-53-4	Toluidine, o- (Methylaniline, 2-)														
8001-35-2	Toxaphene (chlorinated camphene)														
10061-02-6	trans-1,3-Dichloropropene														
120-82-1	Trichlorobenzene, 1,2,4-														
79-00-5	Trichloroethane, 1,1,2-														
79-01-6	Trichloroethylene (TCE)														
75-69-4	Trichlorofluoromethane (CFC-11)														
88-06-2	Trichlorophenol, 2,4,6-														
96-18-4	Trichloropropane, 1,2,3-														
96-19-5	Trichloropropene, 1,2,3-														
76-13-1	Trichlorotrifluoroethane, 1,1,2- (CFC-13)														
121-44-8	Triethylamine														
420-46-2	Trifluoroethane, 1,1,1-														
526-73-8	Trimethylbenzene, 1,2,3-														
95-63-6	Trimethylbenzene, 1,2,4-														
108-67-8	Trimethylbenzene, 1,3,5-														
URANIUM-	Uranium (Soluble Salts)														
7440-61-1	Uranium, Insoluble Compounds														
7440-62-2	Vanadium and Compounds														
1314-62-1	Vanadium Pentoxide, (V2O5)														
108-05-4	Vinyl acetate														
593-60-2	Vinyl bromide														
75-01-4	Vinyl chloride														
1330-20-7	Xylenes														
108-38-3	Xylenes, m-														
95-47-6	Xylenes, o-														
106-42-3	Xylenes, p-														
13530-65-9	Zinc chromate														

CAS # or MPCA #	Chemical Name					STRU15		STRU16		STRU17		STRU74		STRU20	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
202-94-8	11H-Benz[b,c]aceanthrylene														
202-98-2	4H-Cyclopenta[d,e,f]chrysene														
75-07-0	Acetaldehyde														
60-35-5	Acetamide														
67-64-1	Acetone														
75-86-5	Acetone Cyanohydrin														
75-05-8	Acetonitrile														
53-96-3	Acetylaminofluorene, 2-														
107-02-8	Acrolein														
79-06-1	Acrylamide														
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-nitro-2-furyl)-														
79-10-7	Acrylic acid														
107-13-1	Acrylonitrile														
111-69-3	Adiponitrile														
ALDEHYD	Aldehydes														
309-00-2	Aldrin														
ALIPHATI	Aliphatic Hydrocarbon Streams (Midrange)														
107-05-1	Allyl chloride														
7429-90-5	Aluminum														
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazol, 2-														
6109-97-3	Amino-9-ethylcarbazolehydrochloride, 3-														
117-79-3	Aminoanthraquinone, 2-														
7664-41-7	Ammonia														
62-53-3	Aniline														
191-26-4	Anthanthrene														
7440-36-0	Antimony														
ANTIMON	Antimony Compounds														
1309-64-4	Antimony trioxide														
140-57-8	Aramite														
7440-38-2	Arsenic														
ARSENIC-	Arsenic Compounds														
1327-53-3	Arsenic Trioxide														
7784-42-1	Arsine														
1332-21-4	Asbestos (units in fibers)														
1332-21-4-	Asbestos, Libby Amphibole (units in fibers)														
123-77-3	Azodicarbonamide														
10294-40-3	Barium Chromate														
199-54-2	Benz[e]aceanthrylene														
202-33-5	Benz[j]aceanthrylene														
211-91-6	Benz[l]aceanthrylene														
71-43-2	Benzene														

CAS # or MPCA #	Chemical Name					STRU15		STRU16		STRU17		STRU74		STRU20	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
92-87-5	Benzidine														
205-82-3	Benzo(j)fluoranthene														
207-08-9	Benzo(k)fluoranthene														
56-55-3	Benzo[a]anthracene														
50-32-8	Benzo[a]pyrene														
205-99-2	Benzo[b]fluoranthene														
205-12-9	Benzo[c]fluorene														
191-24-2	Benzo[g,h,i]perylene														
65-85-0	Benzoic Acid														
100-44-7	Benzyl chloride														
7440-41-7	Beryllium														
BERYLLIU	Beryllium Compounds														
13510-49-1	Beryllium sulfate														
111-44-4	Bis(2-chloroethyl)ether														
117-81-7	Bis(2-ethylhexyl)phthalate (DEHP)														
542-88-1	Bis(chloromethyl)ether														
7440-42-8	Boron And Borates Only														
10294-34-5	Boron Trichloride														
7637-07-2	Boron Trifluoride														
108-86-1	Bromobenzene														
74-97-5	Bromochloromethane														
75-27-4	Bromodichloromethane														
75-25-2	Bromoform														
74-83-9	Bromomethane														
106-94-5	Bromopropane, 1-														
106-99-0	Butadiene, 1,3-														
78-92-2	Butyl alcohol, sec-														
111-76-2	Butyl Cellosolve (ethylene glycol monobutyl ether)														
25013-16-5	Butylated hydroxyanisole														
3068-88-0	Butyrolactone, beta-														
7440-43-9	Cadmium														
CADMIUM	Cadmium Compounds														
13765-19-0	Calcium Chromate														
105-60-2	Caprolactum														
75-15-0	Carbon disulfide														
630-08-0	Carbon Monoxide														
56-23-5	Carbon tetrachloride														
463-58-1	Carbonyl sulfide														
111-15-9	Cellosolve Acetate (ethylene glycol monoethyl ether acetate)														
1306-38-3	Cerium Oxide and Cerium Compounds														
12789-03-6	Chlordane or (57-74-9)														

CAS # or MPCA #	Chemical Name					STRU15		STRU16		STRU17		STRU74		STRU20	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
115-28-6	Chlorendic acid														
108171-26	Chlorinated Paraffins (C12, 60% Chlorine)														
7782-50-5	Chlorine														
10049-04-4	Chlorine Oxide (CLO2)														
75-68-3	Chloro-1,1-difluoroethane, 1- (HCFC-142b)														
563-47-3	Chloro-2-methylpropene, 3-														
95-83-0	Chloro-o-phenylenediamine, 4-														
95-69-2	Chloro-o-toluidine, p-														
532-27-4	Chloroacetophenone, 2-														
108-90-7	Chlorobenzene														
98-56-6	Chlorobenzotrifluoride, 4-														
75-45-6	Chlorodifluoromethane (HCFC-22)														
67-66-3	Chloroform														
107-30-2	Chloromethyl Methyl Ether														
88-73-3	Chloronitrobenzene, o-														
100-00-5	Chloronitrobenzene, p-														
76-06-2	Chloropicrin														
126-99-8	Chloroprene														
1333-82-0	Chromic acid mists and dissolved Cr(VI) aerosols														
7440-47-3	Chromium														
18540-29-9	Chromium (Hexavalent)														
18540-29-9	Chromium (Hexavalent) - Particulate														
CHROM-C	Chromium Compounds														
16065-83-1	Chromium(III) Compounds														
218-01-9	Chrysene (Benzo(a)phenanthrene)														
87-29-6	Cinnamyl anthranilate														
10061-01-5	cis-1,3-Dichloropropene														
8007-45-2	Coal Tar														
7440-48-4	Cobalt														
0-00-7	Coke Oven Emissions														
7440-50-8	Copper														
COPPER-	Copper Compounds														
120-71-8	Cresidine, p-														
108-39-4	Cresol, m-														
95-48-7	Cresol, o-														
106-44-5	Cresol, p-														
1319-77-3	Cresols/Cresylic acid (isomers and mixture)														
98-82-8	Cumene														
135-20-6	Cupferron														
57-12-5	Cyanide (Cyanide ion, Inorganic cyanides, Isocyanide)														
CYANIDE-	Cyanide Compounds														

CAS # or MPCA #	Chemical Name					STRU15		STRU16		STRU17		STRU74		STRU20	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
110-82-7	Cyclohexane														
108-94-1	Cyclohexanone														
27208-37-3	Cyclopenta[c,d]pyrene														
50-29-3	DDT														
615-05-4	Diaminoanisole, 2,4-														
101-80-4	Diaminodiphenyl ether, 4,4-														
103-33-3	Diazene, Diphenyl														
226-36-8	Dibenz(a,h)acridine														
224-42-0	Dibenz(a,j)acridine														
53-70-3	Dibenz[a,h]anthracene														
192-65-4	Dibenzo(a,e)pyrene														
189-64-0	Dibenzo(a,h)pyrene														
191-30-0	Dibenzo(a,l)pyrene														
194-59-2	Dibenzo(c,g)carbazole, 7H-														
5385-75-1	Dibenzo[a,e]fluoranthene														
189-55-9	Dibenzo[a,i]pyrene														
96-12-8	Dibromo-3-chloropropane, 1,2-														
764-41-0	Dichloro-2-butene, 1,4-														
1476-11-5	Dichloro-2-butene, cis-1,4-														
106-46-7	Dichlorobenzene(p), 1,4-														
25321-22-6	Dichlorobenzenes														
91-94-1	Dichlorobenzidene, 3,3-														
75-71-8	Dichlorodifluoromethane (CFC-12)														
75-35-4	Dichloroethylene (1,1-) (Vinylidene chloride)														
156-60-5	Dichloroethylene, trans-1,2-														
542-75-6	Dichloropropene, 1,3-														
78-88-6	Dichloropropene, 2,3-														
62-73-7	Dichlorvos														
77-73-6	Dicyclopentadiene														
60-57-1	Dieldrin														
0-02-4	Diesel exhaust particulate														
111-42-2	Diethanolamine														
112-34-5	Diethylene Glycol Monobutyl Ether														
111-90-0	Diethylene Glycol Monoethyl Ether														
75-37-6	Difluoroethane, 1,1-														
108-20-3	Diisopropyl Ether														
60-11-7	Dimethyl aminoazobenzene														
68-12-2	Dimethyl formamide														
108-01-0	Dimethylamino ethanol, 2-														
57-97-6	Dimethylbenz[a]anthracene, 7,12-														
57-14-7	Dimethylhydrazine, 1,1-														

CAS # or MPCA #	Chemical Name					STRU15		STRU16		STRU17		STRU74		STRU20	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
42397-64-8	Dinitropyrene, 1,6- (BaP)														
42397-65-9	Dinitropyrene, 1,8- (BaP)														
121-14-2	Dinitrotoluene, 2,4-														
123-91-1	Dioxane, 1,4- (1,4-Diethylene dioxide)														
122-66-7	Diphenylhydrazine, 1,2-														
106-89-8	Epichlorohydrin (l-Chloro-2,3-epoxypropane)														
106-88-7	Epoxybutane, 1,2-														
110-80-5	Ethoxyethanol, 2- (ethylene glycol monoethyl ether)														
141-78-6	Ethyl acetate														
140-88-5	Ethyl Acrylate														
100-41-4	Ethyl benzene														
51-79-6	Ethyl carbamate (Urethane)														
75-00-3	Ethyl chloride (Chloroethane)														
97-63-2	Ethyl Methacrylate														
106-93-4	Ethylene dibromide (Dibromoethane)														
107-06-2	Ethylene dichloride (1,2-Dichloroethane)														
107-21-1	Ethylene glycol														
75-21-8	Ethylene oxide														
96-45-7	Ethylene thiourea														
75-34-3	Ethylidene dichloride (1,1-Dichloroethane)														
206-44-0	Fluoranthene														
FLUORIDE	Fluorides (except hydrogen fluoride)														
50-00-0	Formaldehyde														
64-18-6	Formic Acid														
111-30-8	Glutaraldehyde														
0-01-2	Glycol ethers														
76-44-8	Heptachlor														
1024-57-3	Heptachlor epoxide														
35822-46-9	Heptachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8-														
00-08-5	Heptachlorodibenzodioxin, All Isomers														
67562-39-4	Heptachlorodibenzofuran, 1,2,3,4,6,7,8-														
55673-89-7	Heptachlorodibenzofuran, 1,2,3,4,7,8,9-														
00-08-4	Heptachlorodibenzofuran, All Isomers														
142-82-5	Heptane, N														
118-74-1	Hexachlorobenzene														
87-68-3	Hexachlorobutadiene														
608-73-1	Hexachlorocyclohexane (technical grade)														
319-84-6	Hexachlorocyclohexane, alpha-														
319-85-7	Hexachlorocyclohexane, beta-1,2,3,4,5,6-														
77-47-4	Hexachlorocyclopentadiene														
39227-28-6	Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-														

CAS # or MPCA #	Chemical Name					STRU15		STRU16		STRU17		STRU74		STRU20	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
57653-85-7	Hexachlorodibenzo-p-dioxin, 1,2,3,6,7,8-														
19408-74-3	Hexachlorodibenzo-p-dioxin, 1,2,3,7,8,9-														
00-08-3	Hexachlorodibenzodioxins, All Isomers														
70648-26-9	Hexachlorodibenzofuran, 1,2,3,4,7,8-														
57117-44-9	Hexachlorodibenzofuran, 1,2,3,6,7,8-														
72918-21-9	Hexachlorodibenzofuran, 1,2,3,7,8,9-														
60851-34-5	Hexachlorodibenzofuran, 2,3,4,6,7,8-														
00-08-2	Hexachlorodibenzofurans, All Isomers														
67-72-1	Hexachloroethane														
822-06-0	Hexamethylene-1,6-diisocyanate														
110-54-3	Hexane														
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl-1-hexanol)														
591-78-6	Hexanone-2														
302-01-2	Hydrazine														
10034-93-2	Hydrazine sulfate														
7647-01-0	Hydrochloric acid (hydrogen chloride)														
74-90-8	Hydrogen cyanide														
7664-39-3	Hydrogen fluoride (Hydrofluoric acid)														
7783-07-5	Hydrogen selenide														
7783-06-4	Hydrogen sulfide														
193-39-5	Indeno(1,2,3-cd)pyrene														
5888-33-5	Isobornyl acrylate														
78-59-1	Isophorone														
67-63-0	Isopropyl alcohol														
7439-92-1	Lead					9.579E-04	1.678E-03	1.574E-03	2.758E-03	4.595E-04	8.050E-04	5.136E-04	8.999E-04	6.217E-04	1.089E-03
7758-97-6	Lead Chromate														
LEAD-CO	Lead Compounds														
58-89-9	Lindane (all isomers)														
108-31-6	Maleic anhydride														
7439-96-5	Manganese														
MANGANE	Manganese Compounds														
7439-97-6	Mercury (elemental)														
MERCURY	Mercury Compounds														
126-98-7	Methacrylonitrile														
67-56-1	Methanol														
109-86-4	Methoxyethanol, 2- (ethylene glycol monomethyl ether EGME)														
96-33-3	Methyl acrylate														
110-49-6	Methyl Cellosolve Acetate														
74-87-3	Methyl chloride (Chloromethane)														
71-55-6	Methyl chloroform (1,1,1-Trichloroethane)														
78-93-3	Methyl ethyl ketone (2-Butanone)														

CAS # or MPCA #	Chemical Name					STRU15		STRU16		STRU17		STRU74		STRU20	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
60-34-4	Methyl Hydrazine														
108-10-1	Methyl isobutyl ketone (Hexone)														
624-83-9	Methyl isocyanate														
80-62-6	Methyl methacrylate														
1634-04-4	Methyl tert butyl ether														
56-49-5	Methylcholanthrene, 3-														
3697-24-3	Methylchrysene, 5-														
101-14-4	Methylene bis(2-chloroaniline), 4,4-														
74-95-3	Methylene Bromide														
75-09-2	Methylene chloride (Dichloromethane)														
101-68-8	Methylene diphenyl diisocyanate (MDI)														
101-77-9	Methylenedianiline, 4,4-														
90-94-8	Michler's ketone														
10595-95-6	N- Nitrosomethylethylamine														
924-16-3	N-Nitrosodi-n-butylamine														
621-64-7	N-Nitrosodi-n-propylamine														
55-18-5	N-Nitrosodiethylamine														
62-75-9	N-Nitrosodimethylamine														
86-30-6	N-Nitrosodiphenylamine														
59-89-2	N-Nitrosomorpholine														
100-75-4	N-Nitrosopiperidine														
111-84-2	N-Nonane														
64724-95-6	Naphtha, High Flash Aromatic (HFAN)														
91-20-3	Naphthalene														
193-09-9	Naphtho[2,3-e]pyrene														
7440-02-0	Nickel														
NICKEL-C	Nickel Compounds														
1313-99-1	Nickel oxide														
0-02-5	Nickel refinery dust from the pyrometallurgical process														
12035-72-2	Nickel sulfide (NI3S2)														
7697-37-2	Nitric acid														
139-13-9	Nitrilotriacetic acid														
18662-53-8	Nitrilotriacetic acid, trisodium salt monohydrate														
602-87-9	Nitroacenaphthene, 5-														
88-74-4	Nitroaniline, 2-														
100-01-6	Nitroaniline, 4-														
98-95-3	Nitrobenzene														
7496-02-8	Nitrochrysene, 6-														
607-57-8	Nitrofluorene, 2-														
10102-44-0	Nitrogen dioxide (NO2)														
75-52-5	Nitromethane														

CAS # or MPCA #	Chemical Name					STRU15		STRU16		STRU17		STRU74		STRU20	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
79-46-9	Nitropropane, 2-														
5522-43-0	Nitropyrene, 1-														
57835-92-4	Nitropyrene, 4-														
156-10-5	Nitrosodiphenylamine, p-														
3268-87-9	Octachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8,9-														
39001-02-0	Octachlorodibenzofuran, 1,2,3,4,6,7,8,9-														
10028-15-6	Ozone														
74472-37-0	PCB 114 (2,3,4,4,5 Pentachlorobiphenyl)														
31508-00-6	PCB 118 (2,3,4,4,5 Pentachlorobiphenyl)														
65510-44-3	PCB 123 (2,3,4,4,5 Pentachlorobiphenyl)														
57465-28-8	PCB 126 (3,3,4,4,5 Pentachlorobiphenyl)														
38380-080	PCB 156 (2,3,3,4,4,5 Hexachlorobiphenyl)														
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexachlorobiphenyl)														
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexachlorobiphenyl)														
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexachlorobiphenyl)														
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Heptachlorobiphenyl)														
32598-13-3	PCB 77 (3,3,4,4-Tetrachlorobiphenyl)														
70362-50-4	PCB 81 (3,4,4,5 Tetrachlorobiphenyl)														
32598-14-4	PCB105 (2,3,3,4,4 Pentachlorobiphenyl)														
40321-76-4	Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-														
00-08-1	Pentachlorodibenzodioxins, All Isomers														
57117-41-6	Pentachlorodibenzofuran, 1,2,3,7,8-														
57117-31-4	Pentachlorodibenzofuran, 2,3,4,7,8-														
00-09-0	Pentachlorodibenzofurans, All Isomers														
87-86-5	Pentachlorophenol														
109-66-0	Pentane, n-														
ALIPHATI	Petroleum Hydrocarbons, Aliphatic Low (C5 - C8)														
ALIPHATI	Petroleum Hydrocarbons, Aliphatic Medium (C9 - C18)														
AROMATI	Petroleum Hydrocarbons, Aromatic Low (C6 - C8; EC6-EC8)														
AROMATI	Petroleum Hydrocarbons, Aromatic Medium (C9 - C16; EC9-EC21)														
85-01-8	Phenanthrene														
108-95-2	Phenol														
75-44-5	Phosgene														
7803-51-2	Phosphine														
7664-38-2	Phosphoric acid														
85-44-9	Phthalic anhydride														
59536-65-1	Polybrominated Biphenyls														
1336-36-3	Polychlorinated biphenyls (Aroclors unspeciated)														
00-08-0	Polychlorinated Dibenzo-P-Dioxins And Furans, Total														
00-05-0	Polychlorinated Dibenzodioxins, Total														
00-05-1	Polychlorinated Dibenzofurans, Total														

CAS # or MPCA #	Chemical Name					STRU15		STRU16		STRU17		STRU74		STRU20	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
130498-29	Polycyclic Aromatic Hydrocarbons (PAH)														
00-01-7	Polycyclic Organic Matter (POM)														
9016-87-9	Polymeric diphenylmethane diisocyanate														
7758-01-2	Potassium bromate														
1120-71-4	Propane sultone, 1,3-														
57-57-8	Propiolactone, beta-														
123-38-6	Propionaldehyde														
115-07-1	Propylene														
78-87-5	Propylene dichloride (1,2-Dichloropropane)														
107-98-2	Propylene Glycol Monomethyl Ether														
75-56-9	Propylene oxide														
930-55-2	Pyrrolidine, 1-Nitroso-														
7782-49-2	Selenium														
0-01-9	Selenium Compounds														
7631-86-9	Silica (crystalline, respirable, PM4)														
1310-73-2	Sodium hydroxide														
10588-01-9	Sodium Dichromate														
7789-06-2	Strontium chromate														
100-42-5	Styrene														
96-09-3	Styrene oxide														
14808-79-8	Sulfates														
126-33-0	Sulfolane														
7446-09-5	Sulfur dioxide														
7664-93-9	Sulfuric acid (aerosol forms only)														
8014-95-7	Sulfuric Acid mixture w. sulfur trioxide (oleum)														
00-09-1	TCDD Eqivalents, 2,3,7,8-														
540-88-5	Tert-Butyl Acetate														
1746-01-6	Tetrachlorodibenzo-p-dioxin, 2,3,7,8-														
00-08-8	Tetrachlorodibenzodioxins, All Isomers														
51207-31-9	Tetrachlorodibenzofuran, 2,3,7,8-														
00-08-6	Tetrachlorodibenzofurans, All Isomers														
630-20-6	Tetrachloroethane, 1,1,1,2-														
79-34-5	Tetrachloroethane, 1,1,2,2-														
127-18-4	Tetrachloroethylene (Perchloroethylene)														
811-97-2	Tetrafluoroethane, 1,1,1,2-														
109-99-9	Tetrahydrofuran														
62-55-5	Thioacetamide														
62-56-6	Thiourea														
108-88-3	Toluene														
584-84-9	Toluene-2,4-diisocyanate														
91-08-7	Toluene-2,6-diisocyanate														

CAS # or MPCA #	Chemical Name					STRU15		STRU16		STRU17		STRU74		STRU20	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
95-80-7	Toluene diamine, 2,4-														
26471-62-5	Toluenediisocyanate (mixed isomers)														
95-53-4	Toluidine, o- (Methylaniline, 2-)														
8001-35-2	Toxaphene (chlorinated camphene)														
10061-02-6	trans-1,3-Dichloropropene														
120-82-1	Trichlorobenzene, 1,2,4-														
79-00-5	Trichloroethane, 1,1,2-														
79-01-6	Trichloroethylene (TCE)														
75-69-4	Trichlorofluoromethane (CFC-11)														
88-06-2	Trichlorophenol, 2,4,6-														
96-18-4	Trichloropropane, 1,2,3-														
96-19-5	Trichloropropene, 1,2,3-														
76-13-1	Trichlorotrifluoroethane, 1,1,2- (CFC-13)														
121-44-8	Triethylamine														
420-46-2	Trifluoroethane, 1,1,1-														
526-73-8	Trimethylbenzene, 1,2,3-														
95-63-6	Trimethylbenzene, 1,2,4-														
108-67-8	Trimethylbenzene, 1,3,5-														
URANIUM-	Uranium (Soluble Salts)														
7440-61-1	Uranium, Insoluble Compounds														
7440-62-2	Vanadium and Compounds														
1314-62-1	Vanadium Pentoxide, (V2O5)														
108-05-4	Vinyl acetate														
593-60-2	Vinyl bromide														
75-01-4	Vinyl chloride														
1330-20-7	Xylenes														
108-38-3	Xylenes, m-														
95-47-6	Xylenes, o-														
106-42-3	Xylenes, p-														
13530-65-9	Zinc chromate														

CAS # or MPCA #	Chemical Name	STRU75				STRU23		STRU24		STRU25		STRU26		STRU30	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
202-94-8	11H-Benz[b,c]aceanthrylene														
202-98-2	4H-Cyclopenta[d,e,f]chrysene														
75-07-0	Acetaldehyde														
60-35-5	Acetamide														
67-64-1	Acetone														
75-86-5	Acetone Cyanohydrin														
75-05-8	Acetonitrile														
53-96-3	Acetylaminofluorene, 2-														
107-02-8	Acrolein														
79-06-1	Acrylamide														
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-nitro-2-furyl)-														
79-10-7	Acrylic acid														
107-13-1	Acrylonitrile														
111-69-3	Adiponitrile														
ALDEHYD	Aldehydes														
309-00-2	Aldrin														
ALIPHATI	Aliphatic Hydrocarbon Streams (Midrange)														
107-05-1	Allyl chloride														
7429-90-5	Aluminum														
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazol, 2-														
6109-97-3	Amino-9-ethylcarbazolehydrochloride, 3-														
117-79-3	Aminoanthraquinone, 2-														
7664-41-7	Ammonia														
62-53-3	Aniline														
191-26-4	Anthanthrene														
7440-36-0	Antimony														
ANTIMON	Antimony Compounds														
1309-64-4	Antimony trioxide														
140-57-8	Aramite														
7440-38-2	Arsenic														
ARSENIC-	Arsenic Compounds														
1327-53-3	Arsenic Trioxide														
7784-42-1	Arsine														
1332-21-4	Asbestos (units in fibers)														
1332-21-4-	Asbestos, Libby Amphibole (units in fibers)														
123-77-3	Azodicarbonamide														
10294-40-3	Barium Chromate														
199-54-2	Benz[e]aceanthrylene														
202-33-5	Benz[j]aceanthrylene														
211-91-6	Benz[l]aceanthrylene														
71-43-2	Benzene														

CAS # or MPCA #	Chemical Name	STRU75				STRU23		STRU24		STRU25		STRU26		STRU30	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
92-87-5	Benzidine														
205-82-3	Benzo(j)fluoranthene														
207-08-9	Benzo(k)fluoranthene														
56-55-3	Benzo[a]anthracene														
50-32-8	Benzo[a]pyrene														
205-99-2	Benzo[b]fluoranthene														
205-12-9	Benzo[c]fluorene														
191-24-2	Benzo[g,h,i]perylene														
65-85-0	Benzoic Acid														
100-44-7	Benzyl chloride														
7440-41-7	Beryllium														
BERYLLIU	Beryllium Compounds														
13510-49-1	Beryllium sulfate														
111-44-4	Bis(2-chloroethyl)ether														
117-81-7	Bis(2-ethylhexyl)phthalate (DEHP)														
542-88-1	Bis(chloromethyl)ether														
7440-42-8	Boron And Borates Only														
10294-34-5	Boron Trichloride														
7637-07-2	Boron Trifluoride														
108-86-1	Bromobenzene														
74-97-5	Bromochloromethane														
75-27-4	Bromodichloromethane														
75-25-2	Bromoform														
74-83-9	Bromomethane														
106-94-5	Bromopropane, 1-														
106-99-0	Butadiene, 1,3-														
78-92-2	Butyl alcohol, sec-														
111-76-2	Butyl Cellosolve (ethylene glycol monobutyl ether)														
25013-16-5	Butylated hydroxyanisole														
3068-88-0	Butyrolactone, beta-														
7440-43-9	Cadmium														
CADMIUM	Cadmium Compounds														
13765-19-0	Calcium Chromate														
105-60-2	Caprolactum														
75-15-0	Carbon disulfide														
630-08-0	Carbon Monoxide														
56-23-5	Carbon tetrachloride														
463-58-1	Carbonyl sulfide														
111-15-9	Cellosolve Acetate (ethylene glycol monoethyl ether acetate)														
1306-38-3	Cerium Oxide and Cerium Compounds														
12789-03-6	Chlordane or (57-74-9)														

CAS # or MPCA #	Chemical Name	STRU75				STRU23		STRU24		STRU25		STRU26		STRU30	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
115-28-6	Chlorendic acid														
108171-26	Chlorinated Paraffins (C12, 60% Chlorine)														
7782-50-5	Chlorine														
10049-04-4	Chlorine Oxide (CLO2)														
75-68-3	Chloro-1,1-difluoroethane, 1- (HCFC-142b)														
563-47-3	Chloro-2-methylpropene, 3-														
95-83-0	Chloro-o-phenylenediamine, 4-														
95-69-2	Chloro-o-toluidine, p-														
532-27-4	Chloroacetophenone, 2-														
108-90-7	Chlorobenzene														
98-56-6	Chlorobenzotrifluoride, 4-														
75-45-6	Chlorodifluoromethane (HCFC-22)														
67-66-3	Chloroform														
107-30-2	Chloromethyl Methyl Ether														
88-73-3	Chloronitrobenzene, o-														
100-00-5	Chloronitrobenzene, p-														
76-06-2	Chloropicrin														
126-99-8	Chloroprene														
1333-82-0	Chromic acid mists and dissolved Cr(VI) aerosols														
7440-47-3	Chromium														
18540-29-9	Chromium (Hexavalent)														
18540-29-9	Chromium (Hexavalent) - Particulate														
CHROM-C	Chromium Compounds														
16065-83-1	Chromium(III) Compounds														
218-01-9	Chrysene (Benzo(a)phenanthrene)														
87-29-6	Cinnamyl anthranilate														
10061-01-5	cis-1,3-Dichloropropene														
8007-45-2	Coal Tar														
7440-48-4	Cobalt														
0-00-7	Coke Oven Emissions														
7440-50-8	Copper														
COPPER-	Copper Compounds														
120-71-8	Cresidine, p-														
108-39-4	Cresol, m-														
95-48-7	Cresol, o-														
106-44-5	Cresol, p-														
1319-77-3	Cresols/Cresylic acid (isomers and mixture)														
98-82-8	Cumene														
135-20-6	Cupferron														
57-12-5	Cyanide (Cyanide ion, Inorganic cyanides, Isocyanide)														
CYANIDE-	Cyanide Compounds														

CAS # or MPCA #	Chemical Name	STRU75				STRU23		STRU24		STRU25		STRU26		STRU30	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
110-82-7	Cyclohexane														
108-94-1	Cyclohexanone														
27208-37-3	Cyclopenta[c,d]pyrene														
50-29-3	DDT														
615-05-4	Diaminoanisole, 2,4-														
101-80-4	Diaminodiphenyl ether, 4,4-														
103-33-3	Diazene, Diphenyl														
226-36-8	Dibenz(a,h)acridine														
224-42-0	Dibenz(a,j)acridine														
53-70-3	Dibenz[a,h]anthracene														
192-65-4	Dibenzo(a,e)pyrene														
189-64-0	Dibenzo(a,h)pyrene														
191-30-0	Dibenzo(a,l)pyrene														
194-59-2	Dibenzo(c,g)carbazole, 7H-														
5385-75-1	Dibenzo[a,e]fluoranthene														
189-55-9	Dibenzo[a,i]pyrene														
96-12-8	Dibromo-3-chloropropane, 1,2-														
764-41-0	Dichloro-2-butene, 1,4-														
1476-11-5	Dichloro-2-butene, cis-1,4-														
106-46-7	Dichlorobenzene(p), 1,4-														
25321-22-6	Dichlorobenzenes														
91-94-1	Dichlorobenzidene, 3,3-														
75-71-8	Dichlorodifluoromethane (CFC-12)														
75-35-4	Dichloroethylene (1,1-) (Vinylidene chloride)														
156-60-5	Dichloroethylene, trans-1,2-														
542-75-6	Dichloropropene, 1,3-														
78-88-6	Dichloropropene, 2,3-														
62-73-7	Dichlorvos														
77-73-6	Dicyclopentadiene														
60-57-1	Dieldrin														
0-02-4	Diesel exhaust particulate														
111-42-2	Diethanolamine														
112-34-5	Diethylene Glycol Monobutyl Ether														
111-90-0	Diethylene Glycol Monoethyl Ether														
75-37-6	Difluoroethane, 1,1-														
108-20-3	Diisopropyl Ether														
60-11-7	Dimethyl aminoazobenzene														
68-12-2	Dimethyl formamide														
108-01-0	Dimethylamino ethanol, 2-														
57-97-6	Dimethylbenz[a]anthracene, 7,12-														
57-14-7	Dimethylhydrazine, 1,1-														

CAS # or MPCA #	Chemical Name	STRU75				STRU23		STRU24		STRU25		STRU26		STRU30	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
42397-64-8	Dinitropyrene, 1,6- (BaP)														
42397-65-9	Dinitropyrene, 1,8- (BaP)														
121-14-2	Dinitrotoluene, 2,4-														
123-91-1	Dioxane, 1,4- (1,4-Diethylene dioxide)														
122-66-7	Diphenylhydrazine, 1,2-														
106-89-8	Epichlorohydrin (l-Chloro-2,3-epoxypropane)														
106-88-7	Epoxybutane, 1,2-														
110-80-5	Ethoxyethanol, 2- (ethylene glycol monoethyl ether)														
141-78-6	Ethyl acetate														
140-88-5	Ethyl Acrylate														
100-41-4	Ethyl benzene														
51-79-6	Ethyl carbamate (Urethane)														
75-00-3	Ethyl chloride (Chloroethane)														
97-63-2	Ethyl Methacrylate														
106-93-4	Ethylene dibromide (Dibromoethane)														
107-06-2	Ethylene dichloride (1,2-Dichloroethane)														
107-21-1	Ethylene glycol														
75-21-8	Ethylene oxide														
96-45-7	Ethylene thiourea														
75-34-3	Ethylidene dichloride (1,1-Dichloroethane)														
206-44-0	Fluoranthene														
FLUORIDE	Fluorides (except hydrogen fluoride)														
50-00-0	Formaldehyde														
64-18-6	Formic Acid														
111-30-8	Glutaraldehyde														
0-01-2	Glycol ethers														
76-44-8	Heptachlor														
1024-57-3	Heptachlor epoxide														
35822-46-9	Heptachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8-														
00-08-5	Heptachlorodibenzodioxin, All Isomers														
67562-39-4	Heptachlorodibenzofuran, 1,2,3,4,6,7,8-														
55673-89-7	Heptachlorodibenzofuran, 1,2,3,4,7,8,9-														
00-08-4	Heptachlorodibenzofuran, All Isomers														
142-82-5	Heptane, N														
118-74-1	Hexachlorobenzene														
87-68-3	Hexachlorobutadiene														
608-73-1	Hexachlorocyclohexane (technical grade)														
319-84-6	Hexachlorocyclohexane, alpha-														
319-85-7	Hexachlorocyclohexane, beta-1,2,3,4,5,6-														
77-47-4	Hexachlorocyclopentadiene														
39227-28-6	Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-														

CAS # or MPCA #	Chemical Name	STRU75				STRU23		STRU24		STRU25		STRU26		STRU30	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
57653-85-7	Hexachlorodibenzo-p-dioxin, 1,2,3,6,7,8-														
19408-74-3	Hexachlorodibenzo-p-dioxin, 1,2,3,7,8,9-														
00-08-3	Hexachlorodibenzodioxins, All Isomers														
70648-26-9	Hexachlorodibenzofuran, 1,2,3,4,7,8-														
57117-44-9	Hexachlorodibenzofuran, 1,2,3,6,7,8-														
72918-21-9	Hexachlorodibenzofuran, 1,2,3,7,8,9-														
60851-34-5	Hexachlorodibenzofuran, 2,3,4,6,7,8-														
00-08-2	Hexachlorodibenzofurans, All Isomers														
67-72-1	Hexachloroethane														
822-06-0	Hexamethylene-1,6-diisocyanate														
110-54-3	Hexane														
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl-1-hexanol)														
591-78-6	Hexanone-2														
302-01-2	Hydrazine														
10034-93-2	Hydrazine sulfate														
7647-01-0	Hydrochloric acid (hydrogen chloride)														
74-90-8	Hydrogen cyanide														
7664-39-3	Hydrogen fluoride (Hydrofluoric acid)														
7783-07-5	Hydrogen selenide														
7783-06-4	Hydrogen sulfide														
193-39-5	Indeno(1,2,3-cd)pyrene														
5888-33-5	Isobornyl acrylate														
78-59-1	Isophorone														
67-63-0	Isopropyl alcohol														
7439-92-1	Lead	8.250E-04	1.445E-03			5.476E-04	9.593E-04	5.426E-04	9.507E-04	6.507E-04	1.140E-03	1.360E-03	2.384E-03	1.490E-03	2.611E-03
7758-97-6	Lead Chromate														
LEAD-CO	Lead Compounds														
58-89-9	Lindane (all isomers)														
108-31-6	Maleic anhydride														
7439-96-5	Manganese														
MANGANE	Manganese Compounds														
7439-97-6	Mercury (elemental)														
MERCURY	Mercury Compounds														
126-98-7	Methacrylonitrile														
67-56-1	Methanol														
109-86-4	Methoxyethanol, 2- (ethylene glycol monomethyl ether EGME)														
96-33-3	Methyl acrylate														
110-49-6	Methyl Cellosolve Acetate														
74-87-3	Methyl chloride (Chloromethane)														
71-55-6	Methyl chloroform (1,1,1-Trichloroethane)														
78-93-3	Methyl ethyl ketone (2-Butanone)														

CAS # or MPCA #	Chemical Name	STRU75				STRU23		STRU24		STRU25		STRU26		STRU30	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
60-34-4	Methyl Hydrazine														
108-10-1	Methyl isobutyl ketone (Hexone)														
624-83-9	Methyl isocyanate														
80-62-6	Methyl methacrylate														
1634-04-4	Methyl tert butyl ether														
56-49-5	Methylcholanthrene, 3-														
3697-24-3	Methylchrysene, 5-														
101-14-4	Methylene bis(2-chloroaniline), 4,4-														
74-95-3	Methylene Bromide														
75-09-2	Methylene chloride (Dichloromethane)														
101-68-8	Methylene diphenyl diisocyanate (MDI)														
101-77-9	Methylenedianiline, 4,4-														
90-94-8	Michler's ketone														
10595-95-6	N- Nitrosomethylethylamine														
924-16-3	N-Nitrosodi-n-butylamine														
621-64-7	N-Nitrosodi-n-propylamine														
55-18-5	N-Nitrosodiethylamine														
62-75-9	N-Nitrosodimethylamine														
86-30-6	N-Nitrosodiphenylamine														
59-89-2	N-Nitrosomorpholine														
100-75-4	N-Nitrosopiperidine														
111-84-2	N-Nonane														
64724-95-6	Naphtha, High Flash Aromatic (HFAN)														
91-20-3	Naphthalene														
193-09-9	Naphtho[2,3-e]pyrene														
7440-02-0	Nickel														
NICKEL-C	Nickel Compounds														
1313-99-1	Nickel oxide														
0-02-5	Nickel refinery dust from the pyrometallurgical process														
12035-72-2	Nickel sulfide (NI3S2)														
7697-37-2	Nitric acid														
139-13-9	Nitrilotriacetic acid														
18662-53-8	Nitrilotriacetic acid, trisodium salt monohydrate														
602-87-9	Nitroacenaphthene, 5-														
88-74-4	Nitroaniline, 2-														
100-01-6	Nitroaniline, 4-														
98-95-3	Nitrobenzene														
7496-02-8	Nitrochrysene, 6-														
607-57-8	Nitrofluorene, 2-														
10102-44-0	Nitrogen dioxide (NO2)														
75-52-5	Nitromethane														

CAS # or MPCA #	Chemical Name	STRU75				STRU23		STRU24		STRU25		STRU26		STRU30	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
79-46-9	Nitropropane, 2-														
5522-43-0	Nitropyrene, 1-														
57835-92-4	Nitropyrene, 4-														
156-10-5	Nitrosodiphenylamine, p-														
3268-87-9	Octachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8,9-														
39001-02-0	Octachlorodibenzofuran, 1,2,3,4,6,7,8,9-														
10028-15-6	Ozone														
74472-37-0	PCB 114 (2,3,4,4,5 Pentachlorobiphenyl)														
31508-00-6	PCB 118 (2,3,4,4,5 Pentachlorobiphenyl)														
65510-44-3	PCB 123 (2,3,4,4,5 Pentachlorobiphenyl)														
57465-28-8	PCB 126 (3,3,4,4,5 Pentachlorobiphenyl)														
38380-080	PCB 156 (2,3,3,4,4,5 Hexachlorobiphenyl)														
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexachlorobiphenyl)														
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexachlorobiphenyl)														
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexachlorobiphenyl)														
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Heptachlorobiphenyl)														
32598-13-3	PCB 77 (3,3,4,4-Tetrachlorobiphenyl)														
70362-50-4	PCB 81 (3,4,4,5 Tetrachlorobiphenyl)														
32598-14-4	PCB105 (2,3,3,4,4 Pentachlorobiphenyl)														
40321-76-4	Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-														
00-08-1	Pentachlorodibenzodioxins, All Isomers														
57117-41-6	Pentachlorodibenzofuran, 1,2,3,7,8-														
57117-31-4	Pentachlorodibenzofuran, 2,3,4,7,8-														
00-09-0	Pentachlorodibenzofurans, All Isomers														
87-86-5	Pentachlorophenol														
109-66-0	Pentane, n-														
ALIPHATI	Petroleum Hydrocarbons, Aliphatic Low (C5 - C8)														
ALIPHATI	Petroleum Hydrocarbons, Aliphatic Medium (C9 - C18)														
AROMATI	Petroleum Hydrocarbons, Aromatic Low (C6 - C8; EC6-EC8)														
AROMATI	Petroleum Hydrocarbons, Aromatic Medium (C9 - C16; EC9-EC21)														
85-01-8	Phenanthrene														
108-95-2	Phenol														
75-44-5	Phosgene														
7803-51-2	Phosphine														
7664-38-2	Phosphoric acid														
85-44-9	Phthalic anhydride														
59536-65-1	Polybrominated Biphenyls														
1336-36-3	Polychlorinated biphenyls (Aroclors unspeciated)														
00-08-0	Polychlorinated Dibenzo-P-Dioxins And Furans, Total														
00-05-0	Polychlorinated Dibenzodioxins, Total														
00-05-1	Polychlorinated Dibenzofurans, Total														

CAS # or MPCA #	Chemical Name	STRU75				STRU23		STRU24		STRU25		STRU26		STRU30	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
130498-29	Polycyclic Aromatic Hydrocarbons (PAH)														
00-01-7	Polycyclic Organic Matter (POM)														
9016-87-9	Polymeric diphenylmethane diisocyanate														
7758-01-2	Potassium bromate														
1120-71-4	Propane sultone, 1,3-														
57-57-8	Propiolactone, beta-														
123-38-6	Propionaldehyde														
115-07-1	Propylene														
78-87-5	Propylene dichloride (1,2-Dichloropropane)														
107-98-2	Propylene Glycol Monomethyl Ether														
75-56-9	Propylene oxide														
930-55-2	Pyrrolidine, 1-Nitroso-														
7782-49-2	Selenium														
0-01-9	Selenium Compounds														
7631-86-9	Silica (crystalline, respirable, PM4)														
1310-73-2	Sodium hydroxide														
10588-01-9	Sodium Dichromate														
7789-06-2	Strontium chromate														
100-42-5	Styrene														
96-09-3	Styrene oxide														
14808-79-8	Sulfates														
126-33-0	Sulfolane														
7446-09-5	Sulfur dioxide														
7664-93-9	Sulfuric acid (aerosol forms only)														
8014-95-7	Sulfuric Acid mixture w. sulfur trioxide (oleum)														
00-09-1	TCDD Eqivalents, 2,3,7,8-														
540-88-5	Tert-Butyl Acetate														
1746-01-6	Tetrachlorodibenzo-p-dioxin, 2,3,7,8-														
00-08-8	Tetrachlorodibenzodioxins, All Isomers														
51207-31-9	Tetrachlorodibenzofuran, 2,3,7,8-														
00-08-6	Tetrachlorodibenzofurans, All Isomers														
630-20-6	Tetrachloroethane, 1,1,1,2-														
79-34-5	Tetrachloroethane, 1,1,2,2-														
127-18-4	Tetrachloroethylene (Perchloroethylene)														
811-97-2	Tetrafluoroethane, 1,1,1,2-														
109-99-9	Tetrahydrofuran														
62-55-5	Thioacetamide														
62-56-6	Thiourea														
108-88-3	Toluene														
584-84-9	Toluene-2,4-diisocyanate														
91-08-7	Toluene-2,6-diisocyanate														

CAS # or MPCA #	Chemical Name	STRU75				STRU23		STRU24		STRU25		STRU26		STRU30	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
95-80-7	Toluene diamine, 2,4-														
26471-62-5	Toluenediisocyanate (mixed isomers)														
95-53-4	Toluidine, o- (Methylaniline, 2-)														
8001-35-2	Toxaphene (chlorinated camphene)														
10061-02-6	trans-1,3-Dichloropropene														
120-82-1	Trichlorobenzene, 1,2,4-														
79-00-5	Trichloroethane, 1,1,2-														
79-01-6	Trichloroethylene (TCE)														
75-69-4	Trichlorofluoromethane (CFC-11)														
88-06-2	Trichlorophenol, 2,4,6-														
96-18-4	Trichloropropane, 1,2,3-														
96-19-5	Trichloropropene, 1,2,3-														
76-13-1	Trichlorotrifluoroethane, 1,1,2- (CFC-13)														
121-44-8	Triethylamine														
420-46-2	Trifluoroethane, 1,1,1-														
526-73-8	Trimethylbenzene, 1,2,3-														
95-63-6	Trimethylbenzene, 1,2,4-														
108-67-8	Trimethylbenzene, 1,3,5-														
URANIUM-	Uranium (Soluble Salts)														
7440-61-1	Uranium, Insoluble Compounds														
7440-62-2	Vanadium and Compounds														
1314-62-1	Vanadium Pentoxide, (V2O5)														
108-05-4	Vinyl acetate														
593-60-2	Vinyl bromide														
75-01-4	Vinyl chloride														
1330-20-7	Xylenes														
108-38-3	Xylenes, m-														
95-47-6	Xylenes, o-														
106-42-3	Xylenes, p-														
13530-65-9	Zinc chromate														

CAS # or MPCA #	Chemical Name	STRU31		STRU32		STRU33		STRU34		STRU35		STRU41	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
202-94-8	11H-Benz[b,c]aceanthrylene												
202-98-2	4H-Cyclopenta[d,e,f]chrysene												
75-07-0	Acetaldehyde												
60-35-5	Acetamide												
67-64-1	Acetone											3.22803E-05	0.000141
75-86-5	Acetone Cyanohydrin												
75-05-8	Acetonitrile												
53-96-3	Acetylaminofluorene, 2-												
107-02-8	Acrolein												
79-06-1	Acrylamide												
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-nitro-2-furyl)-												
79-10-7	Acrylic acid												
107-13-1	Acrylonitrile												
111-69-3	Adiponitrile												
ALDEHYD	Aldehydes												
309-00-2	Aldrin												
ALIPHATI	Aliphatic Hydrocarbon Streams (Midrange)												
107-05-1	Allyl chloride												
7429-90-5	Aluminum												
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazol, 2-												
6109-97-3	Amino-9-ethylcarbazolehydrochloride, 3-												
117-79-3	Aminoanthraquinone, 2-												
7664-41-7	Ammonia												
62-53-3	Aniline												
191-26-4	Anthanthrene												
7440-36-0	Antimony												
ANTIMON	Antimony Compounds												
1309-64-4	Antimony trioxide												
140-57-8	Aramite												
7440-38-2	Arsenic												
ARSENIC-	Arsenic Compounds												
1327-53-3	Arsenic Trioxide												
7784-42-1	Arsine												
1332-21-4	Asbestos (units in fibers)												
1332-21-4-	Asbestos, Libby Amphibole (units in fibers)												
123-77-3	Azodicarbonamide												
10294-40-3	Barium Chromate												
199-54-2	Benz[e]aceanthrylene												
202-33-5	Benz[j]aceanthrylene												
211-91-6	Benz[l]aceanthrylene												
71-43-2	Benzene											1.97847E-06	8.67E-06

CAS # or MPCA #	Chemical Name	STRU31		STRU32		STRU33		STRU34		STRU35		STRU41	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
92-87-5	Benzidine												
205-82-3	Benzo(j)fluoranthene												
207-08-9	Benzo(k)fluoranthene												
56-55-3	Benzo[a]anthracene												
50-32-8	Benzo[a]pyrene												
205-99-2	Benzo[b]fluoranthene												
205-12-9	Benzo[c]fluorene												
191-24-2	Benzo[g,h,i]perylene												
65-85-0	Benzoic Acid												
100-44-7	Benzyl chloride											1.24956E-05	5.47E-05
7440-41-7	Beryllium												
BERYLLIU	Beryllium Compounds												
13510-49-1	Beryllium sulfate												
111-44-4	Bis(2-chloroethyl)ether												
117-81-7	Bis(2-ethylhexyl)phthalate (DEHP)												
542-88-1	Bis(chloromethyl)ether												
7440-42-8	Boron And Borates Only												
10294-34-5	Boron Trichloride												
7637-07-2	Boron Trifluoride												
108-86-1	Bromobenzene												
74-97-5	Bromochloromethane												
75-27-4	Bromodichloromethane											6.50812E-06	2.85E-05
75-25-2	Bromoform											2.49912E-05	0.000109
74-83-9	Bromomethane											3.64455E-06	1.6E-05
106-94-5	Bromopropane, 1-												
106-99-0	Butadiene, 1,3-											2.13466E-06	9.35E-06
78-92-2	Butyl alcohol, sec-												
111-76-2	Butyl Cellosolve (ethylene glycol monobutyl ether)												
25013-16-5	Butylated hydroxyanisole												
3068-88-0	Butyrolactone, beta-												
7440-43-9	Cadmium												
CADMIUM	Cadmium Compounds												
13765-19-0	Calcium Chromate												
105-60-2	Caprolactum												
75-15-0	Carbon disulfide											3.1239E-06	1.37E-05
630-08-0	Carbon Monoxide												
56-23-5	Carbon tetrachloride											5.98747E-06	2.62E-05
463-58-1	Carbonyl sulfide												
111-15-9	Cellosolve Acetate (ethylene glycol monoethyl ether acetate)												
1306-38-3	Cerium Oxide and Cerium Compounds												
12789-03-6	Chlordane or (57-74-9)												

CAS # or MPCA #	Chemical Name	STRU31		STRU32		STRU33		STRU34		STRU35		STRU41	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
115-28-6	Chlorendic acid												
108171-26	Chlorinated Paraffins (C12, 60% Chlorine)												
7782-50-5	Chlorine												
10049-04-4	Chlorine Oxide (CLO2)												
75-68-3	Chloro-1,1-difluoroethane, 1- (HCFC-142b)												
563-47-3	Chloro-2-methylpropene, 3-												
95-83-0	Chloro-o-phenylenediamine, 4-												
95-69-2	Chloro-o-toluidine, p-												
532-27-4	Chloroacetophenone, 2-												
108-90-7	Chlorobenzene											4.42552E-06	1.94E-05
98-56-6	Chlorobenzotrifluoride, 4-												
75-45-6	Chlorodifluoromethane (HCFC-22)												
67-66-3	Chloroform											2.36896E-06	1.04E-05
107-30-2	Chloromethyl Methyl Ether												
88-73-3	Chloronitrobenzene, o-												
100-00-5	Chloronitrobenzene, p-												
76-06-2	Chloropicrin												
126-99-8	Chloroprene												
1333-82-0	Chromic acid mists and dissolved Cr(VI) aerosols												
7440-47-3	Chromium												
18540-29-9	Chromium (Hexavalent)												
18540-29-9	Chromium (Hexavalent) - Particulate												
CHROM-C	Chromium Compounds												
16065-83-1	Chromium(III) Compounds												
218-01-9	Chrysene (Benzo(a)phenanthrene)												
87-29-6	Cinnamyl anthranilate												
10061-01-5	cis-1,3-Dichloropropene											1.09336E-05	4.79E-05
8007-45-2	Coal Tar												
7440-48-4	Cobalt												
0-00-7	Coke Oven Emissions												
7440-50-8	Copper												
COPPER-	Copper Compounds												
120-71-8	Cresidine, p-												
108-39-4	Cresol, m-												
95-48-7	Cresol, o-												
106-44-5	Cresol, p-												
1319-77-3	Cresols/Cresylic acid (isomers and mixture)												
98-82-8	Cumene												
135-20-6	Cupferron												
57-12-5	Cyanide (Cyanide ion, Inorganic cyanides, Isocyanide)												
CYANIDE-	Cyanide Compounds												

CAS # or MPCA #	Chemical Name	STRU31		STRU32		STRU33		STRU34		STRU35		STRU41	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
110-82-7	Cyclohexane											8.33039E-06	3.65E-05
108-94-1	Cyclohexanone												
27208-37-3	Cyclopenta[c,d]pyrene												
50-29-3	DDT												
615-05-4	Diaminoanisole, 2,4-												
101-80-4	Diaminodiphenyl ether, 4,4-												
103-33-3	Diazene, Diphenyl												
226-36-8	Dibenz(a,h)acridine												
224-42-0	Dibenz(a,j)acridine												
53-70-3	Dibenz[a,h]anthracene												
192-65-4	Dibenzo(a,e)pyrene												
189-64-0	Dibenzo(a,h)pyrene												
191-30-0	Dibenzo(a,l)pyrene												
194-59-2	Dibenzo(c,g)carbazole, 7H-												
5385-75-1	Dibenzo[a,e]fluoranthene												
189-55-9	Dibenzo[a,i]pyrene												
96-12-8	Dibromo-3-chloropropane, 1,2-												
764-41-0	Dichloro-2-butene, 1,4-												
1476-11-5	Dichloro-2-butene, cis-1,4-												
106-46-7	Dichlorobenzene(p), 1,4-											1.45782E-05	6.39E-05
25321-22-6	Dichlorobenzenes												
91-94-1	Dichlorobenzidene, 3,3-												
75-71-8	Dichlorodifluoromethane (CFC-12)											3.48835E-05	0.000153
75-35-4	Dichloroethylene (1,1-) (Vinylidene chloride)											3.90487E-06	1.71E-05
156-60-5	Dichloroethylene, trans-1,2-											9.92E-04	0.004344
542-75-6	Dichloropropene, 1,3-												
78-88-6	Dichloropropene, 2,3-												
62-73-7	Dichlorvos												
77-73-6	Dicyclopentadiene												
60-57-1	Dieldrin												
0-02-4	Diesel exhaust particulate												
111-42-2	Diethanolamine												
112-34-5	Diethylene Glycol Monobutyl Ether												
111-90-0	Diethylene Glycol Monoethyl Ether												
75-37-6	Difluoroethane, 1,1-												
108-20-3	Diisopropyl Ether												
60-11-7	Dimethyl aminoazobenzene												
68-12-2	Dimethyl formamide												
108-01-0	Dimethylamino ethanol, 2-												
57-97-6	Dimethylbenz[a]anthracene, 7,12-												
57-14-7	Dimethylhydrazine, 1,1-												

CAS # or MPCA #	Chemical Name	STRU31		STRU32		STRU33		STRU34		STRU35		STRU41	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
42397-64-8	Dinitropyrene, 1,6- (BaP)												
42397-65-9	Dinitropyrene, 1,8- (BaP)												
121-14-2	Dinitrotoluene, 2,4-												
123-91-1	Dioxane, 1,4- (1,4-Diethylene dioxide)												
122-66-7	Diphenylhydrazine, 1,2-												
106-89-8	Epichlorohydrin (l-Chloro-2,3-epoxypropane)												
106-88-7	Epoxybutane, 1,2-												
110-80-5	Ethoxyethanol, 2- (ethylene glycol monoethyl ether)												
141-78-6	Ethyl acetate											3.38422E-06	1.48E-05
140-88-5	Ethyl Acrylate												
100-41-4	Ethyl benzene											1.0413E-05	4.56E-05
51-79-6	Ethyl carbamate (Urethane)												
75-00-3	Ethyl chloride (Chloroethane)											2.55118E-06	1.12E-05
97-63-2	Ethyl Methacrylate												
106-93-4	Ethylene dibromide (Dibromoethane)											3.64455E-06	1.6E-05
107-06-2	Ethylene dichloride (1,2-Dichloroethane)											3.90487E-06	1.71E-05
107-21-1	Ethylene glycol												
75-21-8	Ethylene oxide												
96-45-7	Ethylene thiourea												
75-34-3	Ethylidene dichloride (1,1-Dichloroethane)											2.47309E-05	0.000108
206-44-0	Fluoranthene												
FLUORIDE	Fluorides (except hydrogen fluoride)												
50-00-0	Formaldehyde												
64-18-6	Formic Acid												
111-30-8	Glutaraldehyde												
0-01-2	Glycol ethers												
76-44-8	Heptachlor												
1024-57-3	Heptachlor epoxide												
35822-46-9	Heptachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8-												
00-08-5	Heptachlorodibenzodioxin, All Isomers												
67562-39-4	Heptachlorodibenzofuran, 1,2,3,4,6,7,8-												
55673-89-7	Heptachlorodibenzofuran, 1,2,3,4,7,8,9-												
00-08-4	Heptachlorodibenzofuran, All Isomers												
142-82-5	Heptane, N											3.90487E-06	1.71E-05
118-74-1	Hexachlorobenzene												
87-68-3	Hexachlorobutadiene											2.57722E-05	0.000113
608-73-1	Hexachlorocyclohexane (technical grade)												
319-84-6	Hexachlorocyclohexane, alpha-												
319-85-7	Hexachlorocyclohexane, beta-1,2,3,4,5,6-												
77-47-4	Hexachlorocyclopentadiene												
39227-28-6	Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-												

CAS # or MPCA #	Chemical Name	STRU31		STRU32		STRU33		STRU34		STRU35		STRU41	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
57653-85-7	Hexachlorodibenzo-p-dioxin, 1,2,3,6,7,8-												
19408-74-3	Hexachlorodibenzo-p-dioxin, 1,2,3,7,8,9-												
00-08-3	Hexachlorodibenzodioxins, All Isomers												
70648-26-9	Hexachlorodibenzofuran, 1,2,3,4,7,8-												
57117-44-9	Hexachlorodibenzofuran, 1,2,3,6,7,8-												
72918-21-9	Hexachlorodibenzofuran, 1,2,3,7,8,9-												
60851-34-5	Hexachlorodibenzofuran, 2,3,4,6,7,8-												
00-08-2	Hexachlorodibenzofurans, All Isomers												
67-72-1	Hexachloroethane												
822-06-0	Hexamethylene-1,6-diisocyanate												
110-54-3	Hexane											3.38422E-06	1.48E-05
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl-1-hexanol)												
591-78-6	Hexanone-2											1.97847E-05	8.67E-05
302-01-2	Hydrazine												
10034-93-2	Hydrazine sulfate												
7647-01-0	Hydrochloric acid (hydrogen chloride)												
74-90-8	Hydrogen cyanide												
7664-39-3	Hydrogen fluoride (Hydrofluoric acid)												
7783-07-5	Hydrogen selenide												
7783-06-4	Hydrogen sulfide												
193-39-5	Indeno(1,2,3-cd)pyrene												
5888-33-5	Isobornyl acrylate									0.027225	0.1192455		
78-59-1	Isophorone												
67-63-0	Isopropyl alcohol											1.37972E-05	6.04E-05
7439-92-1	Lead	7.348E-04	1.287E-03	7.410E-04	1.298E-03	1.323E-03	2.319E-03	1.417E-03	2.482E-03	4.412E-03	4.706E-04		
7758-97-6	Lead Chromate												
LEAD-CO	Lead Compounds												
58-89-9	Lindane (all isomers)												
108-31-6	Maleic anhydride												
7439-96-5	Manganese												
MANGANE	Manganese Compounds												
7439-97-6	Mercury (elemental)												
MERCURY	Mercury Compounds												
126-98-7	Methacrylonitrile												
67-56-1	Methanol												
109-86-4	Methoxyethanol, 2- (ethylene glycol monomethyl ether EGME)												
96-33-3	Methyl acrylate												
110-49-6	Methyl Cellosolve Acetate												
74-87-3	Methyl chloride (Chloromethane)											3.38422E-06	1.48E-05
71-55-6	Methyl chloroform (1,1,1-Trichloroethane)											0.000123134	0.000539
78-93-3	Methyl ethyl ketone (2-Butanone)											1.43179E-05	6.27E-05

CAS # or MPCA #	Chemical Name	STRU31		STRU32		STRU33		STRU34		STRU35		STRU41	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
60-34-4	Methyl Hydrazine												
108-10-1	Methyl isobutyl ketone (Hexone)											1.97847E-05	8.67E-05
624-83-9	Methyl isocyanate												
80-62-6	Methyl methacrylate												
1634-04-4	Methyl tert butyl ether											1.74418E-05	7.64E-05
56-49-5	Methylcholanthrene, 3-												
3697-24-3	Methylchrysene, 5-												
101-14-4	Methylene bis(2-chloroaniline), 4,4-												
74-95-3	Methylene Bromide												
75-09-2	Methylene chloride (Dichloromethane)											1.69211E-05	7.41E-05
101-68-8	Methylene diphenyl diisocyanate (MDI)												
101-77-9	Methylenedianiline, 4,4-												
90-94-8	Michler's ketone												
10595-95-6	N- Nitrosomethylethylamine												
924-16-3	N-Nitrosodi-n-butylamine												
621-64-7	N-Nitrosodi-n-propylamine												
55-18-5	N-Nitrosodiethylamine												
62-75-9	N-Nitrosodimethylamine												
86-30-6	N-Nitrosodiphenylamine												
59-89-2	N-Nitrosomorpholine												
100-75-4	N-Nitrosopiperidine												
111-84-2	N-Nonane												
64724-95-6	Naphtha, High Flash Aromatic (HFAN)												
91-20-3	Naphthalene											1.27559E-05	5.59E-05
193-09-9	Naphtho[2,3-e]pyrene												
7440-02-0	Nickel												
NICKEL-C	Nickel Compounds												
1313-99-1	Nickel oxide												
0-02-5	Nickel refinery dust from the pyrometallurgical process												
12035-72-2	Nickel sulfide (NI3S2)												
7697-37-2	Nitric acid												
139-13-9	Nitrilotriacetic acid												
18662-53-8	Nitrilotriacetic acid, trisodium salt monohydrate												
602-87-9	Nitroacenaphthene, 5-												
88-74-4	Nitroaniline, 2-												
100-01-6	Nitroaniline, 4-												
98-95-3	Nitrobenzene												
7496-02-8	Nitrochrysene, 6-												
607-57-8	Nitrofluorene, 2-												
10102-44-0	Nitrogen dioxide (NO2)												
75-52-5	Nitromethane												

CAS # or MPCA #	Chemical Name	STRU31		STRU32		STRU33		STRU34		STRU35		STRU41	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
79-46-9	Nitropropane, 2-												
5522-43-0	Nitropyrene, 1-												
57835-92-4	Nitropyrene, 4-												
156-10-5	Nitrosodiphenylamine, p-												
3268-87-9	Octachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8,9-												
39001-02-0	Octachlorodibenzofuran, 1,2,3,4,6,7,8,9-												
10028-15-6	Ozone												
74472-37-0	PCB 114 (2,3,4,4,5 Pentachlorobiphenyl)												
31508-00-6	PCB 118 (2,3,4,4,5 Pentachlorobiphenyl)												
65510-44-3	PCB 123 (2,3,4,4,5 Pentachlorobiphenyl)												
57465-28-8	PCB 126 (3,3,4,4,5 Pentachlorobiphenyl)												
38380-080	PCB 156 (2,3,3,4,4,5 Hexachlorobiphenyl)												
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexachlorobiphenyl)												
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexachlorobiphenyl)												
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexachlorobiphenyl)												
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Heptachlorobiphenyl)												
32598-13-3	PCB 77 (3,3,4,4-Tetrachlorobiphenyl)												
70362-50-4	PCB 81 (3,4,4,5 Tetrachlorobiphenyl)												
32598-14-4	PCB105 (2,3,3,4,4 Pentachlorobiphenyl)												
40321-76-4	Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-												
00-08-1	Pentachlorodibenzodioxins, All Isomers												
57117-41-6	Pentachlorodibenzofuran, 1,2,3,7,8-												
57117-31-4	Pentachlorodibenzofuran, 2,3,4,7,8-												
00-09-0	Pentachlorodibenzofurans, All Isomers												
87-86-5	Pentachlorophenol												
109-66-0	Pentane, n-												
ALIPHATI	Petroleum Hydrocarbons, Aliphatic Low (C5 - C8)												
ALIPHATI	Petroleum Hydrocarbons, Aliphatic Medium (C9 - C18)												
AROMATI	Petroleum Hydrocarbons, Aromatic Low (C6 - C8; EC6-EC8)												
AROMATI	Petroleum Hydrocarbons, Aromatic Medium (C9 - C16; EC9-EC21)												
85-01-8	Phenanthrene												
108-95-2	Phenol												
75-44-5	Phosgene												
7803-51-2	Phosphine												
7664-38-2	Phosphoric acid												
85-44-9	Phthalic anhydride												
59536-65-1	Polybrominated Biphenyls												
1336-36-3	Polychlorinated biphenyls (Aroclors unspeciated)												
00-08-0	Polychlorinated Dibenzo-P-Dioxins And Furans, Total												
00-05-0	Polychlorinated Dibenzodioxins, Total												
00-05-1	Polychlorinated Dibenzofurans, Total												

CAS # or MPCA #	Chemical Name	STRU31		STRU32		STRU33		STRU34		STRU35		STRU41	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
130498-29	Polycyclic Aromatic Hydrocarbons (PAH)												
00-01-7	Polycyclic Organic Matter (POM)												
9016-87-9	Polymeric diphenylmethane diisocyanate												
7758-01-2	Potassium bromate												
1120-71-4	Propane sultone, 1,3-												
57-57-8	Propiolactone, beta-												
123-38-6	Propionaldehyde												
115-07-1	Propylene											4.1652E-06	1.82E-05
78-87-5	Propylene dichloride (1,2-Dichloropropane)											4.42552E-06	1.94E-05
107-98-2	Propylene Glycol Monomethyl Ether												
75-56-9	Propylene oxide												
930-55-2	Pyrrolidine, 1-Nitroso-												
7782-49-2	Selenium												
0-01-9	Selenium Compounds												
7631-86-9	Silica (crystalline, respirable, PM4)												
1310-73-2	Sodium hydroxide												
10588-01-9	Sodium Dichromate												
7789-06-2	Strontium chromate												
100-42-5	Styrene											4.1652E-06	1.82E-05
96-09-3	Styrene oxide												
14808-79-8	Sulfates												
126-33-0	Sulfolane												
7446-09-5	Sulfur dioxide												
7664-93-9	Sulfuric acid (aerosol forms only)												
8014-95-7	Sulfuric Acid mixture w. sulfur trioxide (oleum)												
00-09-1	TCDD Eqivalents, 2,3,7,8-												
540-88-5	Tert-Butyl Acetate												
1746-01-6	Tetrachlorodibenzo-p-dioxin, 2,3,7,8-												
00-08-8	Tetrachlorodibenzodioxins, All Isomers												
51207-31-9	Tetrachlorodibenzofuran, 2,3,7,8-												
00-08-6	Tetrachlorodibenzofurans, All Isomers												
630-20-6	Tetrachloroethane, 1,1,1,2-												
79-34-5	Tetrachloroethane, 1,1,2,2-											6.76844E-06	2.96E-05
127-18-4	Tetrachloroethylene (Perchloroethylene)											3.38422E-06	1.48E-05
811-97-2	Tetrafluoroethane, 1,1,1,2-												
109-99-9	Tetrahydrofuran											2.86357E-06	1.25E-05
62-55-5	Thioacetamide												
62-56-6	Thiourea												
108-88-3	Toluene											3.64455E-06	1.6E-05
584-84-9	Toluene-2,4-diisocyanate												
91-08-7	Toluene-2,6-diisocyanate												

CAS # or MPCA #	Chemical Name	STRU31		STRU32		STRU33		STRU34		STRU35		STRU41	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
95-80-7	Toluene diamine, 2,4-												
26471-62-5	Toluenediisocyanate (mixed isomers)												
95-53-4	Toluidine, o- (Methylaniline, 2-)												
8001-35-2	Toxaphene (chlorinated camphene)												
10061-02-6	trans-1,3-Dichloropropene											1.09336E-05	4.79E-05
120-82-1	Trichlorobenzene, 1,2,4-											3.59248E-05	0.000157
79-00-5	Trichloroethane, 1,1,2-											2.60325E-06	1.14E-05
79-01-6	Trichloroethylene (TCE)											5.85731E-05	0.000257
75-69-4	Trichlorofluoromethane (CFC-11)											5.46682E-06	2.39E-05
88-06-2	Trichlorophenol, 2,4,6-												
96-18-4	Trichloropropane, 1,2,3-												
96-19-5	Trichloropropene, 1,2,3-												
76-13-1	Trichlorotrifluoroethane, 1,1,2- (CFC-13)											7.54942E-06	3.31E-05
121-44-8	Triethylamine												
420-46-2	Trifluoroethane, 1,1,1-												
526-73-8	Trimethylbenzene, 1,2,3-												
95-63-6	Trimethylbenzene, 1,2,4-											4.68585E-06	2.05E-05
108-67-8	Trimethylbenzene, 1,3,5-											4.68585E-06	2.05E-05
URANIUM-	Uranium (Soluble Salts)												
7440-61-1	Uranium, Insoluble Compounds												
7440-62-2	Vanadium and Compounds												
1314-62-1	Vanadium Pentoxide, (V2O5)												
108-05-4	Vinyl acetate											3.38422E-06	1.48E-05
593-60-2	Vinyl bromide												
75-01-4	Vinyl chloride											1.24956E-06	5.47E-06
1330-20-7	Xylenes											2.52515E-05	0.000111
108-38-3	Xylenes, m-												
95-47-6	Xylenes, o-												
106-42-3	Xylenes, p-												
13530-65-9	Zinc chromate												

CAS # or MPCA #	Chemical Name	STRU43 FAN7		STRU44 FAN1		STRU45 FAN2		STRU46 FAN3		STRU47 FAN4		STRU48 FAN5	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
202-94-8	11H-Benz[b,c]aceanthrylene												
202-98-2	4H-Cyclopenta[d,e,f]chrysene												
75-07-0	Acetaldehyde												
60-35-5	Acetamide												
67-64-1	Acetone												
75-86-5	Acetone Cyanohydrin												
75-05-8	Acetonitrile												
53-96-3	Acetylaminofluorene, 2-												
107-02-8	Acrolein												
79-06-1	Acrylamide												
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-nitro-2-furyl)-												
79-10-7	Acrylic acid												
107-13-1	Acrylonitrile												
111-69-3	Adiponitrile												
ALDEHYD	Aldehydes												
309-00-2	Aldrin												
ALIPHATI	Aliphatic Hydrocarbon Streams (Midrange)												
107-05-1	Allyl chloride												
7429-90-5	Aluminum												
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazol, 2-												
6109-97-3	Amino-9-ethylcarbazolehydrochloride, 3-												
117-79-3	Aminoanthraquinone, 2-												
7664-41-7	Ammonia												
62-53-3	Aniline												
191-26-4	Anthanthrene												
7440-36-0	Antimony												
ANTIMON	Antimony Compounds												
1309-64-4	Antimony trioxide												
140-57-8	Aramite												
7440-38-2	Arsenic	3.65196E-07	1.6E-06	8.14E-07	3.56E-06	8.14E-07	3.56E-06	8.14E-07	3.56E-06	3.97485E-07	1.74E-06	3.65196E-07	1.6E-06
ARSENIC-	Arsenic Compounds												
1327-53-3	Arsenic Trioxide												
7784-42-1	Arsine												
1332-21-4	Asbestos (units in fibers)												
1332-21-4-	Asbestos, Libby Amphibole (units in fibers)												
123-77-3	Azodicarbonamide												
10294-40-3	Barium Chromate												
199-54-2	Benz[e]aceanthrylene												
202-33-5	Benz[j]aceanthrylene												
211-91-6	Benz[l]aceanthrylene												
71-43-2	Benzene	3.83456E-06	1.68E-05	8.55E-06	3.74E-05	8.55E-06	3.74E-05	8.55E-06	3.74E-05	4.17359E-06	1.83E-05	3.83456E-06	1.68E-05

CAS # or MPCA #	Chemical Name	STRU43 FAN7		STRU44 FAN1		STRU45 FAN2		STRU46 FAN3		STRU47 FAN4		STRU48 FAN5	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
92-87-5	Benzidine												
205-82-3	Benzo(j)fluoranthene												
207-08-9	Benzo(k)fluoranthene												
56-55-3	Benzo[a]anthracene												
50-32-8	Benzo[a]pyrene												
205-99-2	Benzo[b]fluoranthene												
205-12-9	Benzo[c]fluorene												
191-24-2	Benzo[g,h,i]perylene												
65-85-0	Benzoic Acid												
100-44-7	Benzyl chloride												
7440-41-7	Beryllium	2.19118E-08	9.6E-08	4.88E-08	2.14E-07	4.88E-08	2.14E-07	4.88E-08	2.14E-07	2.38491E-08	1.04E-07	2.19118E-08	9.6E-08
BERYLLIU	Beryllium Compounds												
13510-49-1	Beryllium sulfate												
111-44-4	Bis(2-chloroethyl)ether												
117-81-7	Bis(2-ethylhexyl)phthalate (DEHP)												
542-88-1	Bis(chloromethyl)ether												
7440-42-8	Boron And Borates Only												
10294-34-5	Boron Trichloride												
7637-07-2	Boron Trifluoride												
108-86-1	Bromobenzene												
74-97-5	Bromochloromethane												
75-27-4	Bromodichloromethane												
75-25-2	Bromoform												
74-83-9	Bromomethane												
106-94-5	Bromopropane, 1-												
106-99-0	Butadiene, 1,3-												
78-92-2	Butyl alcohol, sec-												
111-76-2	Butyl Cellosolve (ethylene glycol monobutyl ether)												
25013-16-5	Butylated hydroxyanisole												
3068-88-0	Butyrolactone, beta-												
7440-43-9	Cadmium	2.00858E-06	8.8E-06	4.48E-06	1.96E-05	4.48E-06	1.96E-05	4.48E-06	1.96E-05	2.18617E-06	9.58E-06	2.00858E-06	8.8E-06
CADMIUM	Cadmium Compounds												
13765-19-0	Calcium Chromate												
105-60-2	Caprolactum												
75-15-0	Carbon disulfide												
630-08-0	Carbon Monoxide	0.153382353	0.671815	3.42E-01	1.50E+00	3.42E-01	1.50E+00	3.42E-01	1.50E+00	0.166943741	0.731214	0.153382353	0.671815
56-23-5	Carbon tetrachloride												
463-58-1	Carbonyl sulfide												
111-15-9	Cellosolve Acetate (ethylene glycol monoethyl ether acetate)												
1306-38-3	Cerium Oxide and Cerium Compounds												
12789-03-6	Chlordane or (57-74-9)												

CAS # or MPCA #	Chemical Name	STRU43 FAN7		STRU44 FAN1		STRU45 FAN2		STRU46 FAN3		STRU47 FAN4		STRU48 FAN5	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
115-28-6	Chlorendic acid												
108171-26	Chlorinated Paraffins (C12, 60% Chlorine)												
7782-50-5	Chlorine												
10049-04-4	Chlorine Oxide (CLO2)												
75-68-3	Chloro-1,1-difluoroethane, 1- (HCFC-142b)												
563-47-3	Chloro-2-methylpropene, 3-												
95-83-0	Chloro-o-phenylenediamine, 4-												
95-69-2	Chloro-o-toluidine, p-												
532-27-4	Chloroacetophenone, 2-												
108-90-7	Chlorobenzene												
98-56-6	Chlorobenzotrifluoride, 4-												
75-45-6	Chlorodifluoromethane (HCFC-22)												
67-66-3	Chloroform												
107-30-2	Chloromethyl Methyl Ether												
88-73-3	Chloronitrobenzene, o-												
100-00-5	Chloronitrobenzene, p-												
76-06-2	Chloropicrin												
126-99-8	Chloroprene												
1333-82-0	Chromic acid mists and dissolved Cr(VI) aerosols												
7440-47-3	Chromium												
18540-29-9	Chromium (Hexavalent)	2.55637E-07	1.12E-06	5.70E-07	2.50E-06	5.70E-07	2.50E-06	5.70E-07	2.50E-06	2.7824E-07	1.22E-06	2.55637E-07	1.12E-06
18540-29-9	Chromium (Hexavalent) - Particulate												
CHROM-C	Chromium Compounds												
16065-83-1	Chromium(III) Compounds	2.30074E-06	1.01E-05	5.13E-06	2.25E-05	5.13E-06	2.25E-05	5.13E-06	2.25E-05	2.50416E-06	1.1E-05	2.30074E-06	1.01E-05
218-01-9	Chrysene (Benzo(a)phenanthrene)												
87-29-6	Cinnamyl anthranilate												
10061-01-5	cis-1,3-Dichloropropene												
8007-45-2	Coal Tar												
7440-48-4	Cobalt	1.53382E-07	6.72E-07	3.42E-07	1.50E-06	3.42E-07	1.50E-06	3.42E-07	1.50E-06	1.66944E-07	7.31E-07	1.53382E-07	6.72E-07
0-00-7	Coke Oven Emissions												
7440-50-8	Copper												
COPPER-	Copper Compounds												
120-71-8	Cresidine, p-												
108-39-4	Cresol, m-												
95-48-7	Cresol, o-												
106-44-5	Cresol, p-												
1319-77-3	Cresols/Cresylic acid (isomers and mixture)												
98-82-8	Cumene												
135-20-6	Cupferron												
57-12-5	Cyanide (Cyanide ion, Inorganic cyanides, Isocyanide)												
CYANIDE-	Cyanide Compounds												

CAS # or MPCA #	Chemical Name	STRU43 FAN7		STRU44 FAN1		STRU45 FAN2		STRU46 FAN3		STRU47 FAN4		STRU48 FAN5	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
110-82-7	Cyclohexane												
108-94-1	Cyclohexanone												
27208-37-3	Cyclopenta[c,d]pyrene												
50-29-3	DDT												
615-05-4	Diaminoanisole, 2,4-												
101-80-4	Diaminodiphenyl ether, 4,4-												
103-33-3	Diazene, Diphenyl												
226-36-8	Dibenz(a,h)acridine												
224-42-0	Dibenz(a,j)acridine												
53-70-3	Dibenz[a,h]anthracene												
192-65-4	Dibenzo(a,e)pyrene												
189-64-0	Dibenzo(a,h)pyrene												
191-30-0	Dibenzo(a,l)pyrene												
194-59-2	Dibenzo(c,g)carbazole, 7H-												
5385-75-1	Dibenzo[a,e]fluoranthene												
189-55-9	Dibenzo[a,i]pyrene												
96-12-8	Dibromo-3-chloropropane, 1,2-												
764-41-0	Dichloro-2-butene, 1,4-												
1476-11-5	Dichloro-2-butene, cis-1,4-												
106-46-7	Dichlorobenzene(p), 1,4-												
25321-22-6	Dichlorobenzenes	2.19118E-06	9.6E-06	4.88E-06	2.14E-05	4.88E-06	2.14E-05	4.88E-06	2.14E-05	2.38491E-06	1.04E-05	2.19118E-06	9.6E-06
91-94-1	Dichlorobenzidene, 3,3-												
75-71-8	Dichlorodifluoromethane (CFC-12)												
75-35-4	Dichloroethylene (1,1-) (Vinylidene chloride)												
156-60-5	Dichloroethylene, trans-1,2-			3.11E-04	1.36E-03	3.11E-04	1.36E-03	0.02	0.07				
542-75-6	Dichloropropene, 1,3-												
78-88-6	Dichloropropene, 2,3-												
62-73-7	Dichlorvos												
77-73-6	Dicyclopentadiene												
60-57-1	Dieldrin												
0-02-4	Diesel exhaust particulate												
111-42-2	Diethanolamine												
112-34-5	Diethylene Glycol Monobutyl Ether												
111-90-0	Diethylene Glycol Monoethyl Ether												
75-37-6	Difluoroethane, 1,1-												
108-20-3	Diisopropyl Ether												
60-11-7	Dimethyl aminoazobenzene												
68-12-2	Dimethyl formamide												
108-01-0	Dimethylamino ethanol, 2-												
57-97-6	Dimethylbenz[a]anthracene, 7,12-												
57-14-7	Dimethylhydrazine, 1,1-												

CAS # or MPCA #	Chemical Name	STRU43 FAN7		STRU44 FAN1		STRU45 FAN2		STRU46 FAN3		STRU47 FAN4		STRU48 FAN5	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
42397-64-8	Dinitropyrene, 1,6- (BaP)												
42397-65-9	Dinitropyrene, 1,8- (BaP)												
121-14-2	Dinitrotoluene, 2,4-												
123-91-1	Dioxane, 1,4- (1,4-Diethylene dioxide)												
122-66-7	Diphenylhydrazine, 1,2-												
106-89-8	Epichlorohydrin (l-Chloro-2,3-epoxypropane)												
106-88-7	Epoxybutane, 1,2-												
110-80-5	Ethoxyethanol, 2- (ethylene glycol monoethyl ether)												
141-78-6	Ethyl acetate												
140-88-5	Ethyl Acrylate												
100-41-4	Ethyl benzene												
51-79-6	Ethyl carbamate (Urethane)												
75-00-3	Ethyl chloride (Chloroethane)												
97-63-2	Ethyl Methacrylate												
106-93-4	Ethylene dibromide (Dibromoethane)												
107-06-2	Ethylene dichloride (1,2-Dichloroethane)												
107-21-1	Ethylene glycol												
75-21-8	Ethylene oxide												
96-45-7	Ethylene thiourea												
75-34-3	Ethylidene dichloride (1,1-Dichloroethane)												
206-44-0	Fluoranthene												
FLUORIDE	Fluorides (except hydrogen fluoride)												
50-00-0	Formaldehyde	0.000136949	0.0006	3.05E-04	1.34E-03	3.05E-04	1.34E-03	3.05E-04	1.34E-03	0.000149057	0.000653	0.000136949	0.0006
64-18-6	Formic Acid												
111-30-8	Glutaraldehyde												
0-01-2	Glycol ethers												
76-44-8	Heptachlor												
1024-57-3	Heptachlor epoxide												
35822-46-9	Heptachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8-												
00-08-5	Heptachlorodibenzodioxin, All Isomers												
67562-39-4	Heptachlorodibenzofuran, 1,2,3,4,6,7,8-												
55673-89-7	Heptachlorodibenzofuran, 1,2,3,4,7,8,9-												
00-08-4	Heptachlorodibenzofuran, All Isomers												
142-82-5	Heptane, N												
118-74-1	Hexachlorobenzene												
87-68-3	Hexachlorobutadiene												
608-73-1	Hexachlorocyclohexane (technical grade)												
319-84-6	Hexachlorocyclohexane, alpha-												
319-85-7	Hexachlorocyclohexane, beta-1,2,3,4,5,6-												
77-47-4	Hexachlorocyclopentadiene												
39227-28-6	Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-												

CAS # or MPCA #	Chemical Name	STRU43 FAN7		STRU44 FAN1		STRU45 FAN2		STRU46 FAN3		STRU47 FAN4		STRU48 FAN5	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
57653-85-7	Hexachlorodibenzo-p-dioxin, 1,2,3,6,7,8-												
19408-74-3	Hexachlorodibenzo-p-dioxin, 1,2,3,7,8,9-												
00-08-3	Hexachlorodibenzodioxins, All Isomers												
70648-26-9	Hexachlorodibenzofuran, 1,2,3,4,7,8-												
57117-44-9	Hexachlorodibenzofuran, 1,2,3,6,7,8-												
72918-21-9	Hexachlorodibenzofuran, 1,2,3,7,8,9-												
60851-34-5	Hexachlorodibenzofuran, 2,3,4,6,7,8-												
00-08-2	Hexachlorodibenzofurans, All Isomers												
67-72-1	Hexachloroethane												
822-06-0	Hexamethylene-1,6-diisocyanate												
110-54-3	Hexane	0.003286765	0.014396	7.32E-03	3.21E-02	7.32E-03	3.21E-02	7.32E-03	3.21E-02	0.003577366	0.015669	0.003286765	0.014396
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl-1-hexanol)												
591-78-6	Hexanone-2												
302-01-2	Hydrazine												
10034-93-2	Hydrazine sulfate												
7647-01-0	Hydrochloric acid (hydrogen chloride)												
74-90-8	Hydrogen cyanide												
7664-39-3	Hydrogen fluoride (Hydrofluoric acid)												
7783-07-5	Hydrogen selenide												
7783-06-4	Hydrogen sulfide												
193-39-5	Indeno(1,2,3-cd)pyrene												
5888-33-5	Isobornyl acrylate												
78-59-1	Isophorone												
67-63-0	Isopropyl alcohol												
7439-92-1	Lead	5.91E-05	1.17E-04	4.42E-04	7.80E-04	2.91E-04	5.15E-04	1.61E-04	2.88E-04	8.16E-05	1.46E-04	1.26E-04	2.23E-04
7758-97-6	Lead Chromate												
LEAD-CO	Lead Compounds												
58-89-9	Lindane (all isomers)												
108-31-6	Maleic anhydride												
7439-96-5	Manganese	6.93873E-07	3.04E-06	2.03E-06	8.91E-06	2.03E-06	8.91E-06	2.03E-06	8.91E-06	7.55222E-07	3.31E-06	6.93873E-07	3.04E-06
MANGANE	Manganese Compounds												
7439-97-6	Mercury (elemental)	4.74755E-07	2.08E-06	1.06E-06	4.63E-06	1.06E-06	4.63E-06	1.06E-06	4.63E-06	5.16731E-07	2.26E-06	4.74755E-07	2.08E-06
MERCURY	Mercury Compounds												
126-98-7	Methacrylonitrile												
67-56-1	Methanol												
109-86-4	Methoxyethanol, 2- (ethylene glycol monomethyl ether EGME)												
96-33-3	Methyl acrylate												
110-49-6	Methyl Cellosolve Acetate												
74-87-3	Methyl chloride (Chloromethane)												
71-55-6	Methyl chloroform (1,1,1-Trichloroethane)												
78-93-3	Methyl ethyl ketone (2-Butanone)												

CAS # or MPCA #	Chemical Name	STRU43 FAN7		STRU44 FAN1		STRU45 FAN2		STRU46 FAN3		STRU47 FAN4		STRU48 FAN5	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
60-34-4	Methyl Hydrazine												
108-10-1	Methyl isobutyl ketone (Hexone)												
624-83-9	Methyl isocyanate												
80-62-6	Methyl methacrylate												
1634-04-4	Methyl tert butyl ether												
56-49-5	Methylcholanthrene, 3-												
3697-24-3	Methylchrysene, 5-												
101-14-4	Methylene bis(2-chloroaniline), 4,4-												
74-95-3	Methylene Bromide												
75-09-2	Methylene chloride (Dichloromethane)												
101-68-8	Methylene diphenyl diisocyanate (MDI)												
101-77-9	Methylenedianiline, 4,4-												
90-94-8	Michler's ketone												
10595-95-6	N- Nitrosomethylethylamine												
924-16-3	N-Nitrosodi-n-butylamine												
621-64-7	N-Nitrosodi-n-propylamine												
55-18-5	N-Nitrosodiethylamine												
62-75-9	N-Nitrosodimethylamine												
86-30-6	N-Nitrosodiphenylamine												
59-89-2	N-Nitrosomorpholine												
100-75-4	N-Nitrosopiperidine												
111-84-2	N-Nonane												
64724-95-6	Naphtha, High Flash Aromatic (HFAN)												
91-20-3	Naphthalene	1.11385E-06	4.88E-06	2.48E-06	1.09E-05	2.48E-06	1.09E-05	2.48E-06	1.09E-05	1.21233E-06	5.31E-06	1.11385E-06	4.88E-06
193-09-9	Naphtho[2,3-e]pyrene												
7440-02-0	Nickel	3.83456E-06	1.68E-05	8.55E-06	3.74E-05	8.55E-06	3.74E-05	8.55E-06	3.74E-05	4.17359E-06	1.83E-05	3.83456E-06	1.68E-05
NICKEL-C	Nickel Compounds												
1313-99-1	Nickel oxide												
0-02-5	Nickel refinery dust from the pyrometallurgical process												
12035-72-2	Nickel sulfide (NI3S2)												
7697-37-2	Nitric acid												
139-13-9	Nitrilotriacetic acid												
18662-53-8	Nitrilotriacetic acid, trisodium salt monohydrate												
602-87-9	Nitroacenaphthene, 5-												
88-74-4	Nitroaniline, 2-												
100-01-6	Nitroaniline, 4-												
98-95-3	Nitrobenzene												
7496-02-8	Nitrochrysene, 6-												
607-57-8	Nitrofluorene, 2-												
10102-44-0	Nitrogen dioxide (NO2)	0.182598039	0.799779	4.07E-01	1.78E+00	4.07E-01	1.78E+00	4.07E-01	1.78E+00	0.198742549	0.870492	0.182598039	0.799779
75-52-5	Nitromethane												

CAS # or MPCA #	Chemical Name	STRU43 FAN7		STRU44 FAN1		STRU45 FAN2		STRU46 FAN3		STRU47 FAN4		STRU48 FAN5	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
79-46-9	Nitropropane, 2-												
5522-43-0	Nitropyrene, 1-												
57835-92-4	Nitropyrene, 4-												
156-10-5	Nitrosodiphenylamine, p-												
3268-87-9	Octachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8,9-												
39001-02-0	Octachlorodibenzofuran, 1,2,3,4,6,7,8,9-												
10028-15-6	Ozone												
74472-37-0	PCB 114 (2,3,4,4,5 Pentachlorobiphenyl)												
31508-00-6	PCB 118 (2,3,4,4,5 Pentachlorobiphenyl)												
65510-44-3	PCB 123 (2,3,4,4,5 Pentachlorobiphenyl)												
57465-28-8	PCB 126 (3,3,4,4,5 Pentachlorobiphenyl)												
38380-080	PCB 156 (2,3,3,4,4,5 Hexachlorobiphenyl)												
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexachlorobiphenyl)												
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexachlorobiphenyl)												
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexachlorobiphenyl)												
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Heptachlorobiphenyl)												
32598-13-3	PCB 77 (3,3,4,4-Tetrachlorobiphenyl)												
70362-50-4	PCB 81 (3,4,4,5 Tetrachlorobiphenyl)												
32598-14-4	PCB105 (2,3,3,4,4 Pentachlorobiphenyl)												
40321-76-4	Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-												
00-08-1	Pentachlorodibenzodioxins, All Isomers												
57117-41-6	Pentachlorodibenzofuran, 1,2,3,7,8-												
57117-31-4	Pentachlorodibenzofuran, 2,3,4,7,8-												
00-09-0	Pentachlorodibenzofurans, All Isomers												
87-86-5	Pentachlorophenol												
109-66-0	Pentane, n-												
ALIPHATI	Petroleum Hydrocarbons, Aliphatic Low (C5 - C8)												
ALIPHATI	Petroleum Hydrocarbons, Aliphatic Medium (C9 - C18)												
AROMATI	Petroleum Hydrocarbons, Aromatic Low (C6 - C8; EC6-EC8)												
AROMATI	Petroleum Hydrocarbons, Aromatic Medium (C9 - C16; EC9-EC21)												
85-01-8	Phenanthrene												
108-95-2	Phenol												
75-44-5	Phosgene												
7803-51-2	Phosphine												
7664-38-2	Phosphoric acid												
85-44-9	Phthalic anhydride												
59536-65-1	Polybrominated Biphenyls												
1336-36-3	Polychlorinated biphenyls (Aroclors unspeciated)												
00-08-0	Polychlorinated Dibenzo-P-Dioxins And Furans, Total												
00-05-0	Polychlorinated Dibenzodioxins, Total												
00-05-1	Polychlorinated Dibenzofurans, Total												

CAS # or MPCA #	Chemical Name	STRU43 FAN7		STRU44 FAN1		STRU45 FAN2		STRU46 FAN3		STRU47 FAN4		STRU48 FAN5	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
130498-29	Polycyclic Aromatic Hydrocarbons (PAH)												
00-01-7	Polycyclic Organic Matter (POM)	1.61051E-07	7.05E-07	3.59E-07	1.57E-06	3.59E-07	1.57E-06	3.59E-07	1.57E-06	1.75291E-07	7.68E-07	1.61051E-07	7.05E-07
9016-87-9	Polymeric diphenylmethane diisocyanate												
7758-01-2	Potassium bromate												
1120-71-4	Propane sultone, 1,3-												
57-57-8	Propiolactone, beta-												
123-38-6	Propionaldehyde												
115-07-1	Propylene												
78-87-5	Propylene dichloride (1,2-Dichloropropane)												
107-98-2	Propylene Glycol Monomethyl Ether												
75-56-9	Propylene oxide												
930-55-2	Pyrrolidine, 1-Nitroso-												
7782-49-2	Selenium	4.38235E-08	1.92E-07	9.77E-08	4.28E-07	9.77E-08	4.28E-07	9.77E-08	4.28E-07	4.76982E-08	2.09E-07	4.38235E-08	1.92E-07
0-01-9	Selenium Compounds												
7631-86-9	Silica (crystalline, respirable, PM4)												
1310-73-2	Sodium hydroxide												
10588-01-9	Sodium Dichromate												
7789-06-2	Strontium chromate												
100-42-5	Styrene												
96-09-3	Styrene oxide												
14808-79-8	Sulfates												
126-33-0	Sulfolane												
7446-09-5	Sulfur dioxide	0.001095588	0.004799	4.07E-01	1.78E+00	4.07E-01	1.78E+00	4.07E-01	1.78E+00	0.001192455	0.005223	0.001095588	0.004799
7664-93-9	Sulfuric acid (aerosol forms only)												
8014-95-7	Sulfuric Acid mixture w. sulfur trioxide (oleum)												
00-09-1	TCDD Eqivalents, 2,3,7,8-												
540-88-5	Tert-Butyl Acetate												
1746-01-6	Tetrachlorodibenzo-p-dioxin, 2,3,7,8-												
00-08-8	Tetrachlorodibenzodioxins, All Isomers												
51207-31-9	Tetrachlorodibenzofuran, 2,3,7,8-												
00-08-6	Tetrachlorodibenzofurans, All Isomers												
630-20-6	Tetrachloroethane, 1,1,1,2-												
79-34-5	Tetrachloroethane, 1,1,2,2-												
127-18-4	Tetrachloroethylene (Perchloroethylene)												
811-97-2	Tetrafluoroethane, 1,1,1,2-												
109-99-9	Tetrahydrofuran												
62-55-5	Thioacetamide												
62-56-6	Thiourea												
108-88-3	Toluene	6.20833E-06	2.72E-05	1.38E-05	6.06E-05	1.38E-05	6.06E-05	1.38E-05	6.06E-05	6.75725E-06	2.96E-05	6.20833E-06	2.72E-05
584-84-9	Toluene-2,4-diisocyanate												
91-08-7	Toluene-2,6-diisocyanate												

CAS # or MPCA #	Chemical Name	STRU43 FAN7		STRU44 FAN1		STRU45 FAN2		STRU46 FAN3		STRU47 FAN4		STRU48 FAN5	
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
95-80-7	Toluene diamine, 2,4-												
26471-62-5	Toluenediisocyanate (mixed isomers)												
95-53-4	Toluidine, o- (Methylaniline, 2-)												
8001-35-2	Toxaphene (chlorinated camphene)												
10061-02-6	trans-1,3-Dichloropropene												
120-82-1	Trichlorobenzene, 1,2,4-												
79-00-5	Trichloroethane, 1,1,2-												
79-01-6	Trichloroethylene (TCE)												
75-69-4	Trichlorofluoromethane (CFC-11)												
88-06-2	Trichlorophenol, 2,4,6-												
96-18-4	Trichloropropane, 1,2,3-												
96-19-5	Trichloropropene, 1,2,3-												
76-13-1	Trichlorotrifluoroethane, 1,1,2- (CFC-13)												
121-44-8	Triethylamine												
420-46-2	Trifluoroethane, 1,1,1-												
526-73-8	Trimethylbenzene, 1,2,3-												
95-63-6	Trimethylbenzene, 1,2,4-												
108-67-8	Trimethylbenzene, 1,3,5-												
URANIUM-	Uranium (Soluble Salts)												
7440-61-1	Uranium, Insoluble Compounds												
7440-62-2	Vanadium and Compounds												
1314-62-1	Vanadium Pentoxide, (V2O5)												
108-05-4	Vinyl acetate												
593-60-2	Vinyl bromide												
75-01-4	Vinyl chloride												
1330-20-7	Xylenes												
108-38-3	Xylenes, m-												
95-47-6	Xylenes, o-												
106-42-3	Xylenes, p-												
13530-65-9	Zinc chromate												

CAS # or MPCA #	Chemical Name	STRU49 FAN6		STRU50 FAN8		STRU51 FAN9		STRU52 FAN10		STRU53 FAN11		STRU59 FAN12		STRU
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
202-94-8	11H-Benz[b,c]aceanthrylene													
202-98-2	4H-Cyclopenta[d,e,f]chrysene													
75-07-0	Acetaldehyde													
60-35-5	Acetamide													
67-64-1	Acetone													
75-86-5	Acetone Cyanohydrin													
75-05-8	Acetonitrile													
53-96-3	Acetylaminofluorene, 2-													
107-02-8	Acrolein													
79-06-1	Acrylamide													
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-nitro-2-furyl)-													
79-10-7	Acrylic acid													
107-13-1	Acrylonitrile													
111-69-3	Adiponitrile													
ALDEHYD	Aldehydes													
309-00-2	Aldrin													
ALIPHATI	Aliphatic Hydrocarbon Streams (Midrange)													
107-05-1	Allyl chloride													
7429-90-5	Aluminum													
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazol, 2-													
6109-97-3	Amino-9-ethylcarbazolehydrochloride, 3-													
117-79-3	Aminoanthraquinone, 2-													
7664-41-7	Ammonia													
62-53-3	Aniline													
191-26-4	Anthanthrene													
7440-36-0	Antimony													
ANTIMON	Antimony Compounds													
1309-64-4	Antimony trioxide													
140-57-8	Aramite													
7440-38-2	Arsenic	3.65196E-07	1.6E-06	2.4265E-07	1.06E-06	4.91E-07	2.15E-06	4.90552E-07	2.15E-06	4.90552E-07	2.15E-06			
ARSENIC-	Arsenic Compounds													
1327-53-3	Arsenic Trioxide													
7784-42-1	Arsine													
1332-21-4	Asbestos (units in fibers)													
1332-21-4-	Asbestos, Libby Amphibole (units in fibers)													
123-77-3	Azodicarbonamide													
10294-40-3	Barium Chromate													
199-54-2	Benz[e]aceanthrylene													
202-33-5	Benz[j]aceanthrylene													

211-91-6	Benz[l]aceanthrylene													
71-43-2	Benzene	3.83456E-06	1.68E-05	2.5478E-06	1.12E-05	5.15E-06	2.26E-05	5.1508E-06	2.26E-05	5.1508E-06	2.26E-05			

CAS # or MPCA #	Chemical Name	STRU49 FAN6		STRU50 FAN8		STRU51 FAN9		STRU52 FAN10		STRU53 FAN11		STRU59 FAN12		STRU
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
92-87-5	Benzidine													
205-82-3	Benzo(j)fluoranthene													
207-08-9	Benzo(k)fluoranthene													
56-55-3	Benzo[a]anthracene													
50-32-8	Benzo[a]pyrene													
205-99-2	Benzo[b]fluoranthene													
205-12-9	Benzo[c]fluorene													
191-24-2	Benzo[g,h,i]perylene													
65-85-0	Benzoic Acid													
100-44-7	Benzyl chloride													
7440-41-7	Beryllium	2.19118E-08	9.6E-08	1.4559E-08	6.38E-08	2.94E-08	1.29E-07	2.94331E-08	1.29E-07	2.94331E-08	1.29E-07			
BERYLLIU	Beryllium Compounds													
13510-49-1	Beryllium sulfate													
111-44-4	Bis(2-chloroethyl)ether													
117-81-7	Bis(2-ethylhexyl)phthalate (DEHP)													
542-88-1	Bis(chloromethyl)ether													
7440-42-8	Boron And Borates Only													
10294-34-5	Boron Trichloride													
7637-07-2	Boron Trifluoride													
108-86-1	Bromobenzene													
74-97-5	Bromochloromethane													
75-27-4	Bromodichloromethane													
75-25-2	Bromoform													
74-83-9	Bromomethane													
106-94-5	Bromopropane, 1-													
106-99-0	Butadiene, 1,3-													
78-92-2	Butyl alcohol, sec-													
111-76-2	Butyl Cellosolve (ethylene glycol monobutyl ether)													
25013-16-5	Butylated hydroxyanisole													
3068-88-0	Butyrolactone, beta-													
7440-43-9	Cadmium	2.00858E-06	8.8E-06	1.3346E-06	5.85E-06	2.7E-06	1.18E-05	2.69804E-06	1.18E-05	2.69804E-06	1.18E-05			
CADMIUM	Cadmium Compounds													
13765-19-0	Calcium Chromate													
105-60-2	Caprolactum													
75-15-0	Carbon disulfide													
630-08-0	Carbon Monoxide	0.153382353	0.671815	0.40764706	1.785494	0.206032	0.902419	0.206031824	0.902419	0.206031824	0.902419			
56-23-5	Carbon tetrachloride													
463-58-1	Carbonyl sulfide													
111-15-9	Cellosolve Acetate (ethylene glycol monoethyl ether acetate)													

1306-38-3	Cerium Oxide and Cerium Compounds													
12789-03-6	Chlordane or (57-74-9)													

CAS # or MPCA #	Chemical Name	STRU49 FAN6		STRU50 FAN8		STRU51 FAN9		STRU52 FAN10		STRU53 FAN11		STRU59 FAN12		STRU
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
115-28-6	Chlorendic acid													
108171-26	Chlorinated Paraffins (C12, 60% Chlorine)													
7782-50-5	Chlorine													
10049-04-4	Chlorine Oxide (CLO2)													
75-68-3	Chloro-1,1-difluoroethane, 1- (HCFC-142b)													
563-47-3	Chloro-2-methylpropene, 3-													
95-83-0	Chloro-o-phenylenediamine, 4-													
95-69-2	Chloro-o-toluidine, p-													
532-27-4	Chloroacetophenone, 2-													
108-90-7	Chlorobenzene													
98-56-6	Chlorobenzotrifluoride, 4-													
75-45-6	Chlorodifluoromethane (HCFC-22)													
67-66-3	Chloroform													
107-30-2	Chloromethyl Methyl Ether													
88-73-3	Chloronitrobenzene, o-													
100-00-5	Chloronitrobenzene, p-													
76-06-2	Chloropicrin													
126-99-8	Chloroprene													
1333-82-0	Chromic acid mists and dissolved Cr(VI) aerosols													
7440-47-3	Chromium													
18540-29-9	Chromium (Hexavalent)	2.55637E-07	1.12E-06	1.6985E-07	7.44E-07	3.43E-07	1.5E-06	3.43386E-07	1.5E-06	3.43386E-07	1.5E-06			
18540-29-9	Chromium (Hexavalent) - Particulate													
CHROM-C	Chromium Compounds													
16065-83-1	Chromium(III) Compounds	2.30074E-06	1.01E-05	1.5287E-06	6.7E-06	3.09E-06	1.35E-05	3.09048E-06	1.35E-05	3.09048E-06	1.35E-05			
218-01-9	Chrysene (Benzo(a)phenanthrene)													
87-29-6	Cinnamyl anthranilate													
10061-01-5	cis-1,3-Dichloropropene													
8007-45-2	Coal Tar													
7440-48-4	Cobalt	1.53382E-07	6.72E-07	1.0191E-07	4.46E-07	2.06E-07	9.02E-07	2.06032E-07	9.02E-07	2.06032E-07	9.02E-07			
0-00-7	Coke Oven Emissions													
7440-50-8	Copper													
COPPER-	Copper Compounds													
120-71-8	Cresidine, p-													
108-39-4	Cresol, m-													
95-48-7	Cresol, o-													
106-44-5	Cresol, p-													
1319-77-3	Cresols/Cresylic acid (isomers and mixture)													
98-82-8	Cumene													
135-20-6	Cupferron													

57-12-5	Cyanide (Cyanide ion, Inorganic cyanides, Isocyanide)													
CYANIDE-	Cyanide Compounds													

CAS # or MPCA #	Chemical Name	STRU49 FAN6		STRU50 FAN8		STRU51 FAN9		STRU52 FAN10		STRU53 FAN11		STRU59 FAN12		STRU
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
110-82-7	Cyclohexane													
108-94-1	Cyclohexanone													
27208-37-3	Cyclopenta[c,d]pyrene													
50-29-3	DDT													
615-05-4	Diaminoanisole, 2,4-													
101-80-4	Diaminodiphenyl ether, 4,4-													
103-33-3	Diazene, Diphenyl													
226-36-8	Dibenz(a,h)acridine													
224-42-0	Dibenz(a,j)acridine													
53-70-3	Dibenz[a,h]anthracene													
192-65-4	Dibenzo(a,e)pyrene													
189-64-0	Dibenzo(a,h)pyrene													
191-30-0	Dibenzo(a,l)pyrene													
194-59-2	Dibenzo(c,g)carbazole, 7H-													
5385-75-1	Dibenzo[a,e]fluoranthene													
189-55-9	Dibenzo[a,i]pyrene													
96-12-8	Dibromo-3-chloropropane, 1,2-													
764-41-0	Dichloro-2-butene, 1,4-													
1476-11-5	Dichloro-2-butene, cis-1,4-													
106-46-7	Dichlorobenzene(p), 1,4-													
25321-22-6	Dichlorobenzenes	2.19118E-06	9.6E-06	1.4559E-06	6.38E-06	2.94E-06	1.29E-05	2.94331E-06	1.29E-05	2.94331E-06	1.29E-05			
91-94-1	Dichlorobenzidene, 3,3-													
75-71-8	Dichlorodifluoromethane (CFC-12)													
75-35-4	Dichloroethylene (1,1-) (Vinylidene chloride)													
156-60-5	Dichloroethylene, trans-1,2-											2.59E-01	1.13E+00	1.88E-03
542-75-6	Dichloropropene, 1,3-													
78-88-6	Dichloropropene, 2,3-													
62-73-7	Dichlorvos													
77-73-6	Dicyclopentadiene													
60-57-1	Dieldrin													
0-02-4	Diesel exhaust particulate													
111-42-2	Diethanolamine													
112-34-5	Diethylene Glycol Monobutyl Ether													
111-90-0	Diethylene Glycol Monoethyl Ether													
75-37-6	Difluoroethane, 1,1-													
108-20-3	Diisopropyl Ether													
60-11-7	Dimethyl aminoazobenzene													
68-12-2	Dimethyl formamide													
108-01-0	Dimethylamino ethanol, 2-													

57-97-6	Dimethylbenz[a]anthracene, 7,12-													
57-14-7	Dimethylhydrazine, 1,1-													

CAS # or MPCA #	Chemical Name	STRU49 FAN6		STRU50 FAN8		STRU51 FAN9		STRU52 FAN10		STRU53 FAN11		STRU59 FAN12		STRU
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
42397-64-8	Dinitropyrene, 1,6- (BaP)													
42397-65-9	Dinitropyrene, 1,8- (BaP)													
121-14-2	Dinitrotoluene, 2,4-													
123-91-1	Dioxane, 1,4- (1,4-Diethylene dioxide)													
122-66-7	Diphenylhydrazine, 1,2-													
106-89-8	Epichlorohydrin (l-Chloro-2,3-epoxypropane)													
106-88-7	Epoxybutane, 1,2-													
110-80-5	Ethoxyethanol, 2- (ethylene glycol monoethyl ether)													
141-78-6	Ethyl acetate													
140-88-5	Ethyl Acrylate													
100-41-4	Ethyl benzene													
51-79-6	Ethyl carbamate (Urethane)													
75-00-3	Ethyl chloride (Chloroethane)													
97-63-2	Ethyl Methacrylate													
106-93-4	Ethylene dibromide (Dibromoethane)													
107-06-2	Ethylene dichloride (1,2-Dichloroethane)													
107-21-1	Ethylene glycol													
75-21-8	Ethylene oxide													
96-45-7	Ethylene thiourea													
75-34-3	Ethylidene dichloride (1,1-Dichloroethane)													
206-44-0	Fluoranthene													
FLUORIDE	Fluorides (except hydrogen fluoride)													
50-00-0	Formaldehyde	0.000136949	0.0006	9.0993E-05	0.000399	0.000184	0.000806	0.000183957	0.000806	0.000183957	0.000806			
64-18-6	Formic Acid													
111-30-8	Glutaraldehyde													
0-01-2	Glycol ethers													
76-44-8	Heptachlor													
1024-57-3	Heptachlor epoxide													
35822-46-9	Heptachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8-													
00-08-5	Heptachlorodibenzodioxin, All Isomers													
67562-39-4	Heptachlorodibenzofuran, 1,2,3,4,6,7,8-													
55673-89-7	Heptachlorodibenzofuran, 1,2,3,4,7,8,9-													
00-08-4	Heptachlorodibenzofuran, All Isomers													
142-82-5	Heptane, N													
118-74-1	Hexachlorobenzene													
87-68-3	Hexachlorobutadiene													
608-73-1	Hexachlorocyclohexane (technical grade)													
319-84-6	Hexachlorocyclohexane, alpha-													
319-85-7	Hexachlorocyclohexane, beta-1,2,3,4,5,6-													

77-47-4	Hexachlorocyclopentadiene													
39227-28-6	Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-													

CAS # or MPCA #	Chemical Name	STRU49 FAN6		STRU50 FAN8		STRU51 FAN9		STRU52 FAN10		STRU53 FAN11		STRU59 FAN12		STRU
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
57653-85-7	Hexachlorodibenzo-p-dioxin, 1,2,3,6,7,8-													
19408-74-3	Hexachlorodibenzo-p-dioxin, 1,2,3,7,8,9-													
00-08-3	Hexachlorodibenzodioxins, All Isomers													
70648-26-9	Hexachlorodibenzofuran, 1,2,3,4,7,8-													
57117-44-9	Hexachlorodibenzofuran, 1,2,3,6,7,8-													
72918-21-9	Hexachlorodibenzofuran, 1,2,3,7,8,9-													
60851-34-5	Hexachlorodibenzofuran, 2,3,4,6,7,8-													
00-08-2	Hexachlorodibenzofurans, All Isomers													
67-72-1	Hexachloroethane													
822-06-0	Hexamethylene-1,6-diisocyanate													
110-54-3	Hexane	0.003286765	0.014396	0.00218382	0.009565	0.004415	0.019338	0.004414968	0.019338	0.004414968	0.019338			
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl-1-hexanol)													
591-78-6	Hexanone-2													
302-01-2	Hydrazine													
10034-93-2	Hydrazine sulfate													
7647-01-0	Hydrochloric acid (hydrogen chloride)													
74-90-8	Hydrogen cyanide													
7664-39-3	Hydrogen fluoride (Hydrofluoric acid)													
7783-07-5	Hydrogen selenide													
7783-06-4	Hydrogen sulfide													
193-39-5	Indeno(1,2,3-cd)pyrene													
5888-33-5	Isobornyl acrylate													
78-59-1	Isophorone													
67-63-0	Isopropyl alcohol													
7439-92-1	Lead	4.40E-05	7.95E-05	8.72E-05	1.66E-04	4.19E-04	7.38E-04	2.63E-04	4.63E-04	1.96E-04	3.47E-04		0	
7758-97-6	Lead Chromate													
LEAD-CO	Lead Compounds													
58-89-9	Lindane (all isomers)													
108-31-6	Maleic anhydride													
7439-96-5	Manganese	6.93873E-07	3.04E-06	4.6103E-07	2.02E-06	9.32E-07	4.08E-06	9.32049E-07	4.08E-06	9.32049E-07	4.08E-06			
MANGANE	Manganese Compounds													
7439-97-6	Mercury (elemental)	4.74755E-07	2.08E-06	3.1544E-07	1.38E-06	6.38E-07	2.79E-06	6.37718E-07	2.79E-06	6.37718E-07	2.79E-06			
MERCURY	Mercury Compounds													
126-98-7	Methacrylonitrile													
67-56-1	Methanol													
109-86-4	Methoxyethanol, 2- (ethylene glycol monomethyl ether EGME)													
96-33-3	Methyl acrylate													
110-49-6	Methyl Cellosolve Acetate													
74-87-3	Methyl chloride (Chloromethane)													

71-55-6	Methyl chloroform (1,1,1-Trichloroethane)													
78-93-3	Methyl ethyl ketone (2-Butanone)													

CAS # or MPCA #	Chemical Name	STRU49 FAN6		STRU50 FAN8		STRU51 FAN9		STRU52 FAN10		STRU53 FAN11		STRU59 FAN12		STRU
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
60-34-4	Methyl Hydrazine													
108-10-1	Methyl isobutyl ketone (Hexone)													
624-83-9	Methyl isocyanate													
80-62-6	Methyl methacrylate													
1634-04-4	Methyl tert butyl ether													
56-49-5	Methylcholanthrene, 3-													
3697-24-3	Methylchrysene, 5-													
101-14-4	Methylene bis(2-chloroaniline), 4,4-													
74-95-3	Methylene Bromide													
75-09-2	Methylene chloride (Dichloromethane)													
101-68-8	Methylene diphenyl diisocyanate (MDI)													
101-77-9	Methylenedianiline, 4,4-													
90-94-8	Michler's ketone													
10595-95-6	N- Nitrosomethylethylamine													
924-16-3	N-Nitrosodi-n-butylamine													
621-64-7	N-Nitrosodi-n-propylamine													
55-18-5	N-Nitrosodiethylamine													
62-75-9	N-Nitrosodimethylamine													
86-30-6	N-Nitrosodiphenylamine													
59-89-2	N-Nitrosomorpholine													
100-75-4	N-Nitrosopiperidine													
111-84-2	N-Nonane													
64724-95-6	Naphtha, High Flash Aromatic (HFAN)													
91-20-3	Naphthalene	1.11385E-06	4.88E-06	7.4007E-07	3.24E-06	1.5E-06	6.55E-06	1.49618E-06	6.55E-06	1.49618E-06	6.55E-06			
193-09-9	Naphtho[2,3-e]pyrene													
7440-02-0	Nickel	3.83456E-06	1.68E-05	2.5478E-06	1.12E-05	5.15E-06	2.26E-05	5.1508E-06	2.26E-05	5.1508E-06	2.26E-05			
NICKEL-C	Nickel Compounds													
1313-99-1	Nickel oxide													
0-02-5	Nickel refinery dust from the pyrometallurgical process													
12035-72-2	Nickel sulfide (NI3S2)													
7697-37-2	Nitric acid													
139-13-9	Nitrilotriacetic acid													
18662-53-8	Nitrilotriacetic acid, trisodium salt monohydrate													
602-87-9	Nitroacenaphthene, 5-													
88-74-4	Nitroaniline, 2-													
100-01-6	Nitroaniline, 4-													
98-95-3	Nitrobenzene													
7496-02-8	Nitrochrysene, 6-													
607-57-8	Nitrofluorene, 2-													

10102-44-0	Nitrogen dioxide (NO2)	0.182598039	0.799779	0.12132353	0.531397	0.245276	1.074309	0.24527598	1.074309	0.24527598	1.074309			
75-52-5	Nitromethane													

CAS # or MPCA #	Chemical Name	STRU49 FAN6		STRU50 FAN8		STRU51 FAN9		STRU52 FAN10		STRU53 FAN11		STRU59 FAN12		STRU
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
79-46-9	Nitropropane, 2-													
5522-43-0	Nitropyrene, 1-													
57835-92-4	Nitropyrene, 4-													
156-10-5	Nitrosodiphenylamine, p-													
3268-87-9	Octachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8,9-													
39001-02-0	Octachlorodibenzofuran, 1,2,3,4,6,7,8,9-													
10028-15-6	Ozone													
74472-37-0	PCB 114 (2,3,4,4,5 Pentachlorobiphenyl)													
31508-00-6	PCB 118 (2,3,4,4,5 Pentachlorobiphenyl)													
65510-44-3	PCB 123 (2,3,4,4,5 Pentachlorobiphenyl)													
57465-28-8	PCB 126 (3,3,4,4,5 Pentachlorobiphenyl)													
38380-080	PCB 156 (2,3,3,4,4,5 Hexachlorobiphenyl)													
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexachlorobiphenyl)													
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexachlorobiphenyl)													
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexachlorobiphenyl)													
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Heptachlorobiphenyl)													
32598-13-3	PCB 77 (3,3,4,4-Tetrachlorobiphenyl)													
70362-50-4	PCB 81 (3,4,4,5 Tetrachlorobiphenyl)													
32598-14-4	PCB105 (2,3,3,4,4 Pentachlorobiphenyl)													
40321-76-4	Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-													
00-08-1	Pentachlorodibenzodioxins, All Isomers													
57117-41-6	Pentachlorodibenzofuran, 1,2,3,7,8-													
57117-31-4	Pentachlorodibenzofuran, 2,3,4,7,8-													
00-09-0	Pentachlorodibenzofurans, All Isomers													
87-86-5	Pentachlorophenol													
109-66-0	Pentane, n-													
ALIPHATI	Petroleum Hydrocarbons, Aliphatic Low (C5 - C8)													
ALIPHATI	Petroleum Hydrocarbons, Aliphatic Medium (C9 - C18)													
AROMATI	Petroleum Hydrocarbons, Aromatic Low (C6 - C8; EC6-EC8)													
AROMATI	Petroleum Hydrocarbons, Aromatic Medium (C9 - C16; EC9-EC21)													
85-01-8	Phenanthrene													
108-95-2	Phenol													
75-44-5	Phosgene													
7803-51-2	Phosphine													
7664-38-2	Phosphoric acid													
85-44-9	Phthalic anhydride													
59536-65-1	Polybrominated Biphenyls													
1336-36-3	Polychlorinated biphenyls (Aroclors unspeciated)													
00-08-0	Polychlorinated Dibenzo-P-Dioxins And Furans, Total													

00-05-0	Polychlorinated Dibenzodioxins, Total													
00-05-1	Polychlorinated Dibenzofurans, Total													

CAS # or MPCA #	Chemical Name	STRU49 FAN6		STRU50 FAN8		STRU51 FAN9		STRU52 FAN10		STRU53 FAN11		STRU59 FAN12		STRU
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
130498-29	Polycyclic Aromatic Hydrocarbons (PAH)													
00-01-7	Polycyclic Organic Matter (POM)	1.61051E-07	7.05E-07	1.0701E-07	4.69E-07	2.16E-07	9.48E-07	2.16333E-07	9.48E-07	2.16333E-07	9.48E-07			
9016-87-9	Polymeric diphenylmethane diisocyanate													
7758-01-2	Potassium bromate													
1120-71-4	Propane sultone, 1,3-													
57-57-8	Propiolactone, beta-													
123-38-6	Propionaldehyde													
115-07-1	Propylene													
78-87-5	Propylene dichloride (1,2-Dichloropropane)													
107-98-2	Propylene Glycol Monomethyl Ether													
75-56-9	Propylene oxide													
930-55-2	Pyrrolidine, 1-Nitroso-													
7782-49-2	Selenium	4.38235E-08	1.92E-07	2.9118E-08	1.28E-07	5.89E-08	2.58E-07	5.88662E-08	2.58E-07	5.88662E-08	2.58E-07			
0-01-9	Selenium Compounds													
7631-86-9	Silica (crystalline, respirable, PM4)													
1310-73-2	Sodium hydroxide													
10588-01-9	Sodium Dichromate													
7789-06-2	Strontium chromate													
100-42-5	Styrene													
96-09-3	Styrene oxide													
14808-79-8	Sulfates													
126-33-0	Sulfolane													
7446-09-5	Sulfur dioxide	0.001095588	0.004799	0.00072794	0.003188	0.001472	0.006446	0.001471656	0.006446	0.001471656	0.006446			
7664-93-9	Sulfuric acid (aerosol forms only)													
8014-95-7	Sulfuric Acid mixture w. sulfur trioxide (oleum)													
00-09-1	TCDD Eqivalents, 2,3,7,8-													
540-88-5	Tert-Butyl Acetate													
1746-01-6	Tetrachlorodibenzo-p-dioxin, 2,3,7,8-													
00-08-8	Tetrachlorodibenzodioxins, All Isomers													
51207-31-9	Tetrachlorodibenzofuran, 2,3,7,8-													
00-08-6	Tetrachlorodibenzofurans, All Isomers													
630-20-6	Tetrachloroethane, 1,1,1,2-													
79-34-5	Tetrachloroethane, 1,1,2,2-													
127-18-4	Tetrachloroethylene (Perchloroethylene)													
811-97-2	Tetrafluoroethane, 1,1,1,2-													
109-99-9	Tetrahydrofuran													
62-55-5	Thioacetamide													
62-56-6	Thiourea													
108-88-3	Toluene	6.20833E-06	2.72E-05	4.125E-06	1.81E-05	8.34E-06	3.65E-05	8.33938E-06	3.65E-05	8.33938E-06	3.65E-05			

584-84-9	Toluene-2,4-diisocyanate													
91-08-7	Toluene-2,6-diisocyanate													

CAS # or MPCA #	Chemical Name	STRU49 FAN6		STRU50 FAN8		STRU51 FAN9		STRU52 FAN10		STRU53 FAN11		STRU59 FAN12		STRU
		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
95-80-7	Toluene diamine, 2,4-													
26471-62-5	Toluenediisocyanate (mixed isomers)													
95-53-4	Toluidine, o- (Methylaniline, 2-)													
8001-35-2	Toxaphene (chlorinated camphene)													
10061-02-6	trans-1,3-Dichloropropene													
120-82-1	Trichlorobenzene, 1,2,4-													
79-00-5	Trichloroethane, 1,1,2-													
79-01-6	Trichloroethylene (TCE)													
75-69-4	Trichlorofluoromethane (CFC-11)													
88-06-2	Trichlorophenol, 2,4,6-													
96-18-4	Trichloropropane, 1,2,3-													
96-19-5	Trichloropropene, 1,2,3-													
76-13-1	Trichlorotrifluoroethane, 1,1,2- (CFC-13)													
121-44-8	Triethylamine													
420-46-2	Trifluoroethane, 1,1,1-													
526-73-8	Trimethylbenzene, 1,2,3-													
95-63-6	Trimethylbenzene, 1,2,4-													
108-67-8	Trimethylbenzene, 1,3,5-													
URANIUM-	Uranium (Soluble Salts)													
7440-61-1	Uranium, Insoluble Compounds													
7440-62-2	Vanadium and Compounds													
1314-62-1	Vanadium Pentoxide, (V2O5)													
108-05-4	Vinyl acetate													
593-60-2	Vinyl bromide													
75-01-4	Vinyl chloride													
1330-20-7	Xylenes													
108-38-3	Xylenes, m-													
95-47-6	Xylenes, o-													
106-42-3	Xylenes, p-													
13530-65-9	Zinc chromate													

CAS # or MPCA #	Chemical Name	0 FAN13		STRU56 FAN14		STRU57 VENT20		SBLDGIA		NBLDGIA		STRU67 Fan 30	
		Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	
202-94-8	11H-Benz[b,c]aceanthrylene												
202-98-2	4H-Cyclopenta[d,e,f]chrysene												
75-07-0	Acetaldehyde												
60-35-5	Acetamide												
67-64-1	Acetone												
75-86-5	Acetone Cyanohydrin												
75-05-8	Acetonitrile												
53-96-3	Acetylaminofluorene, 2-												
107-02-8	Acrolein												
79-06-1	Acrylamide												
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-nitro-2-furyl)-												
79-10-7	Acrylic acid												
107-13-1	Acrylonitrile												
111-69-3	Adiponitrile												
ALDEHYD	Aldehydes												
309-00-2	Aldrin												
ALIPHATI	Aliphatic Hydrocarbon Streams (Midrange)												
107-05-1	Allyl chloride												
7429-90-5	Aluminum												
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazol, 2-												
6109-97-3	Amino-9-ethylcarbazolehydrochloride, 3-												
117-79-3	Aminoanthraquinone, 2-												
7664-41-7	Ammonia												
62-53-3	Aniline												
191-26-4	Anthanthrene												
7440-36-0	Antimony												
ANTIMON	Antimony Compounds												
1309-64-4	Antimony trioxide												
140-57-8	Aramite												
7440-38-2	Arsenic		4.9E-07	2.15E-06			4.5E-07	1.97E-06	2.1E-06	9.18E-06			
ARSENIC-	Arsenic Compounds												
1327-53-3	Arsenic Trioxide												
7784-42-1	Arsine												
1332-21-4	Asbestos (units in fibers)												
1332-21-4-	Asbestos, Libby Amphibole (units in fibers)												
123-77-3	Azodicarbonamide												
10294-40-3	Barium Chromate												
199-54-2	Benz[e]aceanthrylene												
202-33-5	Benz[j]aceanthrylene												
211-91-6	Benz[l]aceanthrylene												
71-43-2	Benzene		5.2E-06	2.26E-05			4.72E-06	2.07E-05	2.2E-05	9.64E-05			

CAS # or MPCA #	Chemical Name	0 FAN13		STRU56 FAN14		STRU57 VENT20	SBLDGIA		NBLDGIA		STRU67 Fan 30	
		Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
92-87-5	Benzidine											
205-82-3	Benzo(j)fluoranthene											
207-08-9	Benzo(k)fluoranthene											
56-55-3	Benzo[a]anthracene											
50-32-8	Benzo[a]pyrene											
205-99-2	Benzo[b]fluoranthene											
205-12-9	Benzo[c]fluorene											
191-24-2	Benzo[g,h,i]perylene											
65-85-0	Benzoic Acid											
100-44-7	Benzyl chloride											
7440-41-7	Beryllium		2.9E-08	1.29E-07			2.7E-08	1.18E-07	1.26E-07	5.51E-07		
BERYLLIU	Beryllium Compounds											
13510-49-1	Beryllium sulfate											
111-44-4	Bis(2-chloroethyl)ether											
117-81-7	Bis(2-ethylhexyl)phthalate (DEHP)											
542-88-1	Bis(chloromethyl)ether											
7440-42-8	Boron And Borates Only											
10294-34-5	Boron Trichloride											
7637-07-2	Boron Trifluoride											
108-86-1	Bromobenzene											
74-97-5	Bromochloromethane											
75-27-4	Bromodichloromethane											
75-25-2	Bromoform											
74-83-9	Bromomethane											
106-94-5	Bromopropane, 1-											
106-99-0	Butadiene, 1,3-											
78-92-2	Butyl alcohol, sec-											
111-76-2	Butyl Cellosolve (ethylene glycol monobutyl ether)											
25013-16-5	Butylated hydroxyanisole											
3068-88-0	Butyrolactone, beta-											
7440-43-9	Cadmium		2.7E-06	1.18E-05			2.47E-06	1.08E-05	1.15E-05	5.05E-05		
CADMIUM	Cadmium Compounds											
13765-19-0	Calcium Chromate											
105-60-2	Caprolactum											
75-15-0	Carbon disulfide											
630-08-0	Carbon Monoxide		0.20603	0.902419			0.188835	0.827099	0.880493	3.856558		
56-23-5	Carbon tetrachloride											
463-58-1	Carbonyl sulfide											
111-15-9	Cellosolve Acetate (ethylene glycol monoethyl ether acetate)											
1306-38-3	Cerium Oxide and Cerium Compounds											
12789-03-6	Chlordane or (57-74-9)											

CAS # or MPCA #	Chemical Name	0 FAN13		STRU56 FAN14		STRU57 VENT20		SBLDGIA		NBLDGIA		STRU67 Fan 30	
		Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	
115-28-6	Chlorendic acid												
108171-26	Chlorinated Paraffins (C12, 60% Chlorine)												
7782-50-5	Chlorine												
10049-04-4	Chlorine Oxide (CLO2)												
75-68-3	Chloro-1,1-difluoroethane, 1- (HCFC-142b)												
563-47-3	Chloro-2-methylpropene, 3-												
95-83-0	Chloro-o-phenylenediamine, 4-												
95-69-2	Chloro-o-toluidine, p-												
532-27-4	Chloroacetophenone, 2-												
108-90-7	Chlorobenzene												
98-56-6	Chlorobenzotrifluoride, 4-												
75-45-6	Chlorodifluoromethane (HCFC-22)												
67-66-3	Chloroform												
107-30-2	Chloromethyl Methyl Ether												
88-73-3	Chloronitrobenzene, o-												
100-00-5	Chloronitrobenzene, p-												
76-06-2	Chloropicrin												
126-99-8	Chloroprene												
1333-82-0	Chromic acid mists and dissolved Cr(VI) aerosols												
7440-47-3	Chromium												
18540-29-9	Chromium (Hexavalent)		3.4E-07	1.5E-06			3.15E-07	1.38E-06	1.47E-06	6.43E-06			
18540-29-9	Chromium (Hexavalent) - Particulate												
CHROM-C	Chromium Compounds												
16065-83-1	Chromium(III) Compounds		3.1E-06	1.35E-05			2.83E-06	1.24E-05	1.32E-05	5.78E-05			
218-01-9	Chrysene (Benzo(a)phenanthrene)												
87-29-6	Cinnamyl anthranilate												
10061-01-5	cis-1,3-Dichloropropene												
8007-45-2	Coal Tar												
7440-48-4	Cobalt		2.1E-07	9.02E-07			1.89E-07	8.27E-07	8.8E-07	3.86E-06			
0-00-7	Coke Oven Emissions												
7440-50-8	Copper												
COPPER-	Copper Compounds												
120-71-8	Cresidine, p-												
108-39-4	Cresol, m-												
95-48-7	Cresol, o-												
106-44-5	Cresol, p-												
1319-77-3	Cresols/Cresylic acid (isomers and mixture)												
98-82-8	Cumene												
135-20-6	Cupferron												
57-12-5	Cyanide (Cyanide ion, Inorganic cyanides, Isocyanide)												
CYANIDE-	Cyanide Compounds												

CAS # or MPCA #	Chemical Name	0 FAN13		STRU56 FAN14		STRU57 VENT20		SBLDGIA		NBLDGIA		STRU67 Fan 30	
		Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	
110-82-7	Cyclohexane												
108-94-1	Cyclohexanone												
27208-37-3	Cyclopenta[c,d]pyrene												
50-29-3	DDT												
615-05-4	Diaminoanisole, 2,4-												
101-80-4	Diaminodiphenyl ether, 4,4-												
103-33-3	Diazene, Diphenyl												
226-36-8	Dibenz(a,h)acridine												
224-42-0	Dibenz(a,j)acridine												
53-70-3	Dibenz[a,h]anthracene												
192-65-4	Dibenzo(a,e)pyrene												
189-64-0	Dibenzo(a,h)pyrene												
191-30-0	Dibenzo(a,l)pyrene												
194-59-2	Dibenzo(c,g)carbazole, 7H-												
5385-75-1	Dibenzo[a,e]fluoranthene												
189-55-9	Dibenzo[a,i]pyrene												
96-12-8	Dibromo-3-chloropropane, 1,2-												
764-41-0	Dichloro-2-butene, 1,4-												
1476-11-5	Dichloro-2-butene, cis-1,4-												
106-46-7	Dichlorobenzene(p), 1,4-												
25321-22-6	Dichlorobenzenes		2.9E-06	1.29E-05			2.7E-06	1.18E-05	1.26E-05	5.51E-05			
91-94-1	Dichlorobenzidene, 3,3-												
75-71-8	Dichlorodifluoromethane (CFC-12)												
75-35-4	Dichloroethylene (1,1-) (Vinylidene chloride)												
156-60-5	Dichloroethylene, trans-1,2-	8.24E-03	1.88E-03	8.24E-03	1.91E-04	8.37E-04							
542-75-6	Dichloropropene, 1,3-												
78-88-6	Dichloropropene, 2,3-												
62-73-7	Dichlorvos												
77-73-6	Dicyclopentadiene												
60-57-1	Dieldrin												
0-02-4	Diesel exhaust particulate												
111-42-2	Diethanolamine												
112-34-5	Diethylene Glycol Monobutyl Ether												
111-90-0	Diethylene Glycol Monoethyl Ether												
75-37-6	Difluoroethane, 1,1-												
108-20-3	Diisopropyl Ether												
60-11-7	Dimethyl aminoazobenzene												
68-12-2	Dimethyl formamide												
108-01-0	Dimethylamino ethanol, 2-												
57-97-6	Dimethylbenz[a]anthracene, 7,12-												
57-14-7	Dimethylhydrazine, 1,1-												

CAS # or MPCA #	Chemical Name	0 FAN13		STRU56 FAN14		STRU57 VENT20		SBLDGIA		NBLDGIA		STRU67 Fan 30	
		Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	
42397-64-8	Dinitropyrene, 1,6- (BaP)												
42397-65-9	Dinitropyrene, 1,8- (BaP)												
121-14-2	Dinitrotoluene, 2,4-												
123-91-1	Dioxane, 1,4- (1,4-Diethylene dioxide)												
122-66-7	Diphenylhydrazine, 1,2-												
106-89-8	Epichlorohydrin (l-Chloro-2,3-epoxypropane)												
106-88-7	Epoxybutane, 1,2-												
110-80-5	Ethoxyethanol, 2- (ethylene glycol monoethyl ether)												
141-78-6	Ethyl acetate												
140-88-5	Ethyl Acrylate												
100-41-4	Ethyl benzene												
51-79-6	Ethyl carbamate (Urethane)												
75-00-3	Ethyl chloride (Chloroethane)												
97-63-2	Ethyl Methacrylate												
106-93-4	Ethylene dibromide (Dibromoethane)												
107-06-2	Ethylene dichloride (1,2-Dichloroethane)												
107-21-1	Ethylene glycol												
75-21-8	Ethylene oxide												
96-45-7	Ethylene thiourea												
75-34-3	Ethylidene dichloride (1,1-Dichloroethane)												
206-44-0	Fluoranthene												
FLUORIDE	Fluorides (except hydrogen fluoride)												
50-00-0	Formaldehyde		0.00018	0.000806			0.000169	0.000738	0.000786	0.003443			
64-18-6	Formic Acid												
111-30-8	Glutaraldehyde												
0-01-2	Glycol ethers												
76-44-8	Heptachlor												
1024-57-3	Heptachlor epoxide												
35822-46-9	Heptachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8-												
00-08-5	Heptachlorodibenzodioxin, All Isomers												
67562-39-4	Heptachlorodibenzofuran, 1,2,3,4,6,7,8-												
55673-89-7	Heptachlorodibenzofuran, 1,2,3,4,7,8,9-												
00-08-4	Heptachlorodibenzofuran, All Isomers												
142-82-5	Heptane, N												
118-74-1	Hexachlorobenzene												
87-68-3	Hexachlorobutadiene												
608-73-1	Hexachlorocyclohexane (technical grade)												
319-84-6	Hexachlorocyclohexane, alpha-												
319-85-7	Hexachlorocyclohexane, beta-1,2,3,4,5,6-												
77-47-4	Hexachlorocyclopentadiene												
39227-28-6	Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-												

CAS # or MPCA #	Chemical Name	0 FAN13		STRU56 FAN14		STRU57 VENT20	SBLDGIA		NBLDGIA		STRU67 Fan 30	
		Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
57653-85-7	Hexachlorodibenzo-p-dioxin, 1,2,3,6,7,8-											
19408-74-3	Hexachlorodibenzo-p-dioxin, 1,2,3,7,8,9-											
00-08-3	Hexachlorodibenzodioxins, All Isomers											
70648-26-9	Hexachlorodibenzofuran, 1,2,3,4,7,8-											
57117-44-9	Hexachlorodibenzofuran, 1,2,3,6,7,8-											
72918-21-9	Hexachlorodibenzofuran, 1,2,3,7,8,9-											
60851-34-5	Hexachlorodibenzofuran, 2,3,4,6,7,8-											
00-08-2	Hexachlorodibenzofurans, All Isomers											
67-72-1	Hexachloroethane											
822-06-0	Hexamethylene-1,6-diisocyanate											
110-54-3	Hexane		0.00441	0.019338			0.004046	0.017724	0.018868	0.082641		
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl-1-hexanol)											
591-78-6	Hexanone-2											
302-01-2	Hydrazine											
10034-93-2	Hydrazine sulfate											
7647-01-0	Hydrochloric acid (hydrogen chloride)											
74-90-8	Hydrogen cyanide											
7664-39-3	Hydrogen fluoride (Hydrofluoric acid)											
7783-07-5	Hydrogen selenide											
7783-06-4	Hydrogen sulfide											
193-39-5	Indeno(1,2,3-cd)pyrene											
5888-33-5	Isobornyl acrylate											
78-59-1	Isophorone											
67-63-0	Isopropyl alcohol											
7439-92-1	Lead	0	2.68E-04	4.73E-04	2.29E-05	1.00E-04	1.12E-06	4.92E-06	5.24E-06	2.30E-05		
7758-97-6	Lead Chromate											
LEAD-CO	Lead Compounds											
58-89-9	Lindane (all isomers)											
108-31-6	Maleic anhydride											
7439-96-5	Manganese		9.3E-07	4.08E-06			8.54E-07	3.74E-06	3.98E-06	1.74E-05		
MANGANE	Manganese Compounds											
7439-97-6	Mercury (elemental)		6.4E-07	2.79E-06			5.84E-07	2.56E-06	2.73E-06	1.19E-05		
MERCURY	Mercury Compounds											
126-98-7	Methacrylonitrile											
67-56-1	Methanol											
109-86-4	Methoxyethanol, 2- (ethylene glycol monomethyl ether EGME)											
96-33-3	Methyl acrylate											
110-49-6	Methyl Cellosolve Acetate											
74-87-3	Methyl chloride (Chloromethane)											
71-55-6	Methyl chloroform (1,1,1-Trichloroethane)											
78-93-3	Methyl ethyl ketone (2-Butanone)											

CAS # or MPCA #	Chemical Name	0 FAN13		STRU56 FAN14		STRU57 VENT20		SBLDGIA		NBLDGIA		STRU67 Fan 30	
		Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	
60-34-4	Methyl Hydrazine												
108-10-1	Methyl isobutyl ketone (Hexone)												
624-83-9	Methyl isocyanate												
80-62-6	Methyl methacrylate												
1634-04-4	Methyl tert butyl ether												
56-49-5	Methylcholanthrene, 3-												
3697-24-3	Methylchrysene, 5-												
101-14-4	Methylene bis(2-chloroaniline), 4,4-												
74-95-3	Methylene Bromide												
75-09-2	Methylene chloride (Dichloromethane)												
101-68-8	Methylene diphenyl diisocyanate (MDI)												
101-77-9	Methylenedianiline, 4,4-												
90-94-8	Michler's ketone												
10595-95-6	N- Nitrosomethylethylamine												
924-16-3	N-Nitrosodi-n-butylamine												
621-64-7	N-Nitrosodi-n-propylamine												
55-18-5	N-Nitrosodiethylamine												
62-75-9	N-Nitrosodimethylamine												
86-30-6	N-Nitrosodiphenylamine												
59-89-2	N-Nitrosomorpholine												
100-75-4	N-Nitrosopiperidine												
111-84-2	N-Nonane												
64724-95-6	Naphtha, High Flash Aromatic (HFAN)												
91-20-3	Naphthalene		1.5E-06	6.55E-06			1.37E-06	6.01E-06	6.39E-06	2.8E-05			
193-09-9	Naphtho[2,3-e]pyrene												
7440-02-0	Nickel		5.2E-06	2.26E-05			4.72E-06	2.07E-05	2.2E-05	9.64E-05			
NICKEL-C	Nickel Compounds												
1313-99-1	Nickel oxide												
0-02-5	Nickel refinery dust from the pyrometallurgical process												
12035-72-2	Nickel sulfide (NI3S2)												
7697-37-2	Nitric acid												
139-13-9	Nitrilotriacetic acid												
18662-53-8	Nitrilotriacetic acid, trisodium salt monohydrate												
602-87-9	Nitroacenaphthene, 5-												
88-74-4	Nitroaniline, 2-												
100-01-6	Nitroaniline, 4-												
98-95-3	Nitrobenzene												
7496-02-8	Nitrochrysene, 6-												
607-57-8	Nitrofluorene, 2-												
10102-44-0	Nitrogen dioxide (NO2)		0.24528	1.074309			0.224804	0.984641	1.048205	4.59114			
75-52-5	Nitromethane												

CAS # or MPCA #	Chemical Name	0 FAN13		STRU56 FAN14		STRU57 VENT20		SBLDGIA		NBLDGIA		STRU67 Fan 30	
		Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	
79-46-9	Nitropropane, 2-												
5522-43-0	Nitropyrene, 1-												
57835-92-4	Nitropyrene, 4-												
156-10-5	Nitrosodiphenylamine, p-												
3268-87-9	Octachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8,9-												
39001-02-0	Octachlorodibenzofuran, 1,2,3,4,6,7,8,9-												
10028-15-6	Ozone												
74472-37-0	PCB 114 (2,3,4,4,5 Pentachlorobiphenyl)												
31508-00-6	PCB 118 (2,3,4,4,5 Pentachlorobiphenyl)												
65510-44-3	PCB 123 (2,3,4,4,5 Pentachlorobiphenyl)												
57465-28-8	PCB 126 (3,3,4,4,5 Pentachlorobiphenyl)												
38380-080	PCB 156 (2,3,3,4,4,5 Hexachlorobiphenyl)												
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexachlorobiphenyl)												
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexachlorobiphenyl)												
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexachlorobiphenyl)												
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Heptachlorobiphenyl)												
32598-13-3	PCB 77 (3,3,4,4-Tetrachlorobiphenyl)												
70362-50-4	PCB 81 (3,4,4,5 Tetrachlorobiphenyl)												
32598-14-4	PCB105 (2,3,3,4,4 Pentachlorobiphenyl)												
40321-76-4	Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-												
00-08-1	Pentachlorodibenzodioxins, All Isomers												
57117-41-6	Pentachlorodibenzofuran, 1,2,3,7,8-												
57117-31-4	Pentachlorodibenzofuran, 2,3,4,7,8-												
00-09-0	Pentachlorodibenzofurans, All Isomers												
87-86-5	Pentachlorophenol												
109-66-0	Pentane, n-												
ALIPHATI	Petroleum Hydrocarbons, Aliphatic Low (C5 - C8)												
ALIPHATI	Petroleum Hydrocarbons, Aliphatic Medium (C9 - C18)												
AROMATI	Petroleum Hydrocarbons, Aromatic Low (C6 - C8; EC6-EC8)												
AROMATI	Petroleum Hydrocarbons, Aromatic Medium (C9 - C16; EC9-EC21)												
85-01-8	Phenanthrene												
108-95-2	Phenol												
75-44-5	Phosgene												
7803-51-2	Phosphine												
7664-38-2	Phosphoric acid												
85-44-9	Phthalic anhydride												
59536-65-1	Polybrominated Biphenyls												
1336-36-3	Polychlorinated biphenyls (Aroclors unspeciated)												
00-08-0	Polychlorinated Dibenzo-P-Dioxins And Furans, Total												
00-05-0	Polychlorinated Dibenzodioxins, Total												
00-05-1	Polychlorinated Dibenzofurans, Total												

CAS # or MPCA #	Chemical Name	0 FAN13		STRU56 FAN14		STRU57 VENT20	SBLDGIA		NBLDGIA		STRU67 Fan 30	
		Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
130498-29	Polycyclic Aromatic Hydrocarbons (PAH)											
00-01-7	Polycyclic Organic Matter (POM)		2.2E-07	9.48E-07			1.98E-07	8.68E-07	9.25E-07	4.05E-06		
9016-87-9	Polymeric diphenylmethane diisocyanate											
7758-01-2	Potassium bromate											
1120-71-4	Propane sultone, 1,3-											
57-57-8	Propiolactone, beta-											
123-38-6	Propionaldehyde											
115-07-1	Propylene											
78-87-5	Propylene dichloride (1,2-Dichloropropane)											
107-98-2	Propylene Glycol Monomethyl Ether											
75-56-9	Propylene oxide											
930-55-2	Pyrrolidine, 1-Nitroso-											
7782-49-2	Selenium		5.9E-08	2.58E-07			5.4E-08	2.36E-07	2.52E-07	1.1E-06		
0-01-9	Selenium Compounds											
7631-86-9	Silica (crystalline, respirable, PM4)											
1310-73-2	Sodium hydroxide											
10588-01-9	Sodium Dichromate											
7789-06-2	Strontium chromate											
100-42-5	Styrene											
96-09-3	Styrene oxide											
14808-79-8	Sulfates											
126-33-0	Sulfolane											
7446-09-5	Sulfur dioxide		0.00147	0.006446			0.001349	0.005908	0.006289	0.027547		
7664-93-9	Sulfuric acid (aerosol forms only)											
8014-95-7	Sulfuric Acid mixture w. sulfur trioxide (oleum)											
00-09-1	TCDD Eqivalents, 2,3,7,8-											
540-88-5	Tert-Butyl Acetate											
1746-01-6	Tetrachlorodibenzo-p-dioxin, 2,3,7,8-											
00-08-8	Tetrachlorodibenzodioxins, All Isomers											
51207-31-9	Tetrachlorodibenzofuran, 2,3,7,8-											
00-08-6	Tetrachlorodibenzofurans, All Isomers											
630-20-6	Tetrachloroethane, 1,1,1,2-											
79-34-5	Tetrachloroethane, 1,1,2,2-											
127-18-4	Tetrachloroethylene (Perchloroethylene)											
811-97-2	Tetrafluoroethane, 1,1,1,2-											
109-99-9	Tetrahydrofuran											
62-55-5	Thioacetamide											
62-56-6	Thiourea											
108-88-3	Toluene		8.3E-06	3.65E-05			7.64E-06	3.35E-05	3.56E-05	0.000156		
584-84-9	Toluene-2,4-diisocyanate											
91-08-7	Toluene-2,6-diisocyanate											

CAS # or MPCA #	Chemical Name	0 FAN13		STRU56 FAN14		STRU57 VENT20		SBLDGIA		NBLDGIA		STRU67 Fan 30	
		Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	
95-80-7	Toluene diamine, 2,4-												
26471-62-5	Toluenediisocyanate (mixed isomers)												
95-53-4	Toluidine, o- (Methylaniline, 2-)												
8001-35-2	Toxaphene (chlorinated camphene)												
10061-02-6	trans-1,3-Dichloropropene												
120-82-1	Trichlorobenzene, 1,2,4-												
79-00-5	Trichloroethane, 1,1,2-												
79-01-6	Trichloroethylene (TCE)												
75-69-4	Trichlorofluoromethane (CFC-11)												
88-06-2	Trichlorophenol, 2,4,6-												
96-18-4	Trichloropropane, 1,2,3-												
96-19-5	Trichloropropene, 1,2,3-												
76-13-1	Trichlorotrifluoroethane, 1,1,2- (CFC-13)												
121-44-8	Triethylamine												
420-46-2	Trifluoroethane, 1,1,1-												
526-73-8	Trimethylbenzene, 1,2,3-												
95-63-6	Trimethylbenzene, 1,2,4-												
108-67-8	Trimethylbenzene, 1,3,5-												
URANIUM-	Uranium (Soluble Salts)												
7440-61-1	Uranium, Insoluble Compounds												
7440-62-2	Vanadium and Compounds												
1314-62-1	Vanadium Pentoxide, (V2O5)												
108-05-4	Vinyl acetate												
593-60-2	Vinyl bromide												
75-01-4	Vinyl chloride												
1330-20-7	Xylenes												
108-38-3	Xylenes, m-												
95-47-6	Xylenes, o-												
106-42-3	Xylenes, p-												
13530-65-9	Zinc chromate												

Alternate Format

GI-07 Spreadsheet

Facility Emmison Summary

Air Quality Permit Program

Enter Type Permit Application

1a) AQ Facility ID No.: 12300341 1b) Agency Interest ID No.: 1005

2) Facility Name: Water Gremlin Company

Emissions by Source Table

3a) Delta ID No.:							3a) Delta ID No.:							3a) Delta ID No.:							3a) Delta ID No.:						
3b) Tempo SI ID No.:		EQUI82					3b) Tempo SI ID No.:		EQUI84					3b) Tempo SI ID No.:		EQUI85					3b) Tempo SI ID No.:		EQUI87				
Description		Battery Terminal Post Cooler 6					Description		Battery Terminal Post Cooler 9					Description		Battery Terminal Post Cooler 10					Description		Battery Terminal Post Cooler 12				
3c)	3d)	3e) Potential				3f)	3c)	3d)	3e) Potential				3f)	3c)	3d)	3e) Potential				3f)	3c)	3d)	3e) Potential				3f)
Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy		Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy		Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy		Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy	
PM	NA	2.47E-03	0.01	0.01	---		PM	NA	2.47E-05	0.01	1.08E-04	---		PM	NA	---	---	---	---		PM	NA	---	---	---	---	
PM10	NA	2.47E-03	0.01	0.01	---		PM10	NA	2.47E-05	0.01	1.08E-04	---		PM10	NA	---	---	---	---		PM10	NA	---	---	---	---	
PM2.5	NA	2.47E-03	0.01	0.01	---		PM2.5	NA	2.47E-05	0.01	1.08E-04	---		PM2.5	NA	---	---	---	---		PM2.5	NA	---	---	---	---	
SO2	NA	---	---	---	---		SO2	NA	---	---	---	---		SO2	NA	---	---	---	---		SO2	NA	---	---	---	---	
NOx	NA	---	---	---	---		NOx	NA	---	---	---	---		NOx	NA	---	---	---	---		NOx	NA	---	---	---	---	
CO	NA	---	---	---	---		CO	NA	---	---	---	---		CO	NA	---	---	---	---		CO	NA	---	---	---	---	
VOC	NA	5.64E-03	0.02	---	---		VOC	NA	5.64E-03	0.02	---	---		VOC	NA	1.21E-03	5.46E-03	---	---		VOC	NA	11.83	52.22	---	---	
Lead	NA	---	---	---	---		Lead	NA	---	---	---	---		Lead	NA	---	---	---	---		Lead	NA	---	---	---	---	
CO2	NA	---	---	---	---		CO2	NA	---	---	---	---		CO2	NA	---	---	---	---		CO2	NA	---	---	---	---	
CH4	NA	---	---	---	---		CH4	NA	---	---	---	---		CH4	NA	---	---	---	---		CH4	NA	---	---	---	---	
N2O	NA	---	---	---	---		N2O	NA	---	---	---	---		N2O	NA	---	---	---	---		N2O	NA	---	---	---	---	
Total GHG (CO2e)	NA	---	---	---	---		Total GHG (CO2e)	NA	---	---	---	---		Total GHG (CO2e)	NA	---	---	---	---		Total GHG (CO2e)	NA	---	---	---	---	
1,1,1-Trichloroethane	71-55-6	---	---	---	---		1,1,1-Trichloroethane	71-55-6	---	---	---	---		1,1,1-Trichloroethane	71-55-6	---	---	---	---		1,1,1-Trichloroethane	71-55-6	---	---	---	---	
1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---		1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---		1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---		1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---	
1,1,2-Trichloroethane	79-00-5	---	---	---	---		1,1,2-Trichloroethane	79-00-5	---	---	---	---		1,1,2-Trichloroethane	79-00-5	---	---	---	---		1,1,2-Trichloroethane	79-00-5	---	---	---	---	
1,1-Dichloroethane	75-34-3	---	---	---	---		1,1-Dichloroethane	75-34-3	---	---	---	---		1,1-Dichloroethane	75-34-3	---	---	---	---		1,1-Dichloroethane	75-34-3	---	---	---	---	
1,1-Dichloroethene	75-35-4	---	---	---	---		1,1-Dichloroethene	75-35-4	---	---	---	---		1,1-Dichloroethene	75-35-4	---	---	---	---		1,1-Dichloroethene	75-35-4	---	---	---	---	
1,2,4-Trichlorobenzene	120-82-1	---	---	---	---		1,2,4-Trichlorobenzene	120-82-1	---	---	---	---		1,2,4-Trichlorobenzene	120-82-1	---	---	---	---		1,2,4-Trichlorobenzene	120-82-1	---	---	---	---	
1,2-Dibromoethane	106-93-4	---	---	---	---		1,2-Dibromoethane	106-93-4	---	---	---	---		1,2-Dibromoethane	106-93-4	---	---	---	---		1,2-Dibromoethane	106-93-4	---	---	---	---	
1,2-Dichloroethane	107-06-2	---	---	---	---		1,2-Dichloroethane	107-06-2	---	---	---	---		1,2-Dichloroethane	107-06-2	---	---	---	---		1,2-Dichloroethane	107-06-2	---	---	---	---	
1,2-Dichloropropane	78-87-5	---	---	---	---		1,2-Dichloropropane	78-87-5	---	---	---	---		1,2-Dichloropropane	78-87-5	---	---	---	---		1,2-Dichloropropane	78-87-5	---	---	---	---	
1,4-Dichlorobenzene	106-46-7	---	---	---	---		1,4-Dichlorobenzene	106-46-7	---	---	---	---		1,4-Dichlorobenzene	106-46-7	---	---	---	---		1,4-Dichlorobenzene	106-46-7	---	---	---	---	
4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---		4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---		4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---		4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---	
Acetaldehyde	75070	---	---	---	---		Acetaldehyde	75070	---	---	---	---		Acetaldehyde	75070	---	---	---	---		Acetaldehyde	75070	---	---	---	---	
1,3-Butadiene	106990	---	---	---	---		1,3-Butadiene	106990	---	---	---	---		1,3-Butadiene	106990	---	---	---	---		1,3-Butadiene	106990	---	---	---	---	
Arsenic	7440-38-2	---	---	---	---		Arsenic	7440-38-2	---	---	---	---		Arsenic	7440-38-2	---	---	---	---		Arsenic	7440-38-2	---	---	---	---	
Benzene	71-43-2	---	---	---	---		Benzene	71-43-2	---	---	---	---		Benzene	71-43-2	---	---	---	---		Benzene	71-43-2	---	---	---	---	
Benzyl chloride	100-44-7	---	---	---	---		Benzyl chloride	100-44-7	---	---	---	---		Benzyl chloride	100-44-7	---	---	---	---		Benzyl chloride	100-44-7	---	---	---	---	
Biomethanic	75-25-2	---	---	---	---		Biomethanic	75-25-2	---	---	---	---		Biomethanic	75-25-2	---	---	---	---		Biomethanic	75-25-2	---	---	---	---	
Biomonmethane	74-83-9	---	---	---	---		Biomonmethane	74-83-9	---	---	---	---		Biomonmethane	74-83-9	---	---	---	---		Biomonmethane	74-83-9	---	---	---	---	
Beryllium	7440-41-7	---	---	---	---		Beryllium	7440-41-7	---	---	---	---		Beryllium	7440-41-7	---	---	---	---		Beryllium	7440-41-7	---	---	---	---	
Cadmium	7440-43-9	---	---	---	---		Cadmium	7440-43-9	---	---	---	---		Cadmium	7440-43-9	---	---	---	---		Cadmium	7440-43-9	---	---	---	---	
Carbon disulfide	75-15-0	---	---	---	---		Carbon disulfide	75-15-0	---	---	---	---		Carbon disulfide	75-15-0	---	---	---	---		Carbon disulfide	75-15-0	---	---	---	---	
Carbon tetrachloride	56-23-5	---	---	---	---		Carbon tetrachloride	56-23-5	---	---	---	---		Carbon tetrachloride	56-23-5	---	---	---	---		Carbon tetrachloride	56-23-5	---	---	---	---	
Chromium	7440-47-3	---	---	---	---		Chromium	7440-47-3	---	---	---	---		Chromium	7440-47-3	---	---	---	---		Chromium	7440-47-3	---	---	---	---	
Chlorobenzene	108-90-7	---	---	---	---		Chlorobenzene	108-90-7	---	---	---	---		Chlorobenzene	108-90-7	---	---	---	---		Chlorobenzene	108-90-7	---	---	---	---	
Chloroethane	75-00-3	---	---	---	---		Chloroethane	75-00-3	---	---	---	---		Chloroethane	75-00-3	---	---	---	---		Chloroethane	75-00-3	---	---	---	---	
Chloroform	67-66-3	---	---	---	---		Chloroform	67-66-3	---	---	---	---		Chloroform	67-66-3	---	---	---	---		Chloroform	67-66-3	---	---	---	---	
Chloromethane	74-87-2	---	---	---	---		Chloromethane	74-87-2	---	---	---	---		Chloromethane	74-87-2	---	---	---	---		Chloromethane	74-87-2	---	---	---	---	
Cobalt	7440-48-4	---	---	---	---		Cobalt	7440-48-4	---	---	---	---		Cobalt	7440-48-4	---	---	---	---		Cobalt	7440-48-4	---	---	---	---	
Dichlorobenzene	25321-22-6	---	---	---	---		Dichlorobenzene	25321-22-6	---	---	---	---		Dichlorobenzene	25321-22-6	---	---	---	---		Dichlorobenzene	25321-22-6	---	---	---	---	
Ethyl Benzene	100-41-4	---	---	---	---		Ethyl Benzene	100-41-4	---	---	---	---		Ethyl Benzene	100-41-4	---	---	---	---		Ethyl Benzene	100-41-4	---	---	---	---	
Formaldehyde	50-00-0	---	---	---	---		Formaldehyde	50-00-0	---	---	---	---		Formaldehyde	50-00-0	---	---	---	---		Formaldehyde	50-00-0	---	---	---	---	
Hexachlorobutadiene	87-68-3	---	---	---	---		Hexachlorobutadiene	87-68-3	---	---	---	---		Hexachlorobutadiene	87-68-3	---	---	---	---		Hexachlorobutadiene	87-68-3	---	---	---	---	
Hexane	110-54-3	---	---	---	---		Hexane	110-54-3	---	---	---	---		Hexane	110-54-3	---	---	---	---		Hexane	110-54-3	---	---	---	---	
Manganese	7439-96-5	---	---	---	---		Manganese	7439-96-5	---	---	---	---		Manganese	7439-96-5	---	---	---	---		Manganese	7439-96-5	---	---	---	---	
Mercury	7439-97-6	---	---	---	---		Mercury	7439-97-6	---	---	---	---		Mercury	7439-97-6	---	---	---	---		Mercury	7439-97-6	---	---	---	---	
Methylene Chloride	75-09-02	---	---	---	---		Methylene Chloride	75-09-02	---	---	---	---		Methylene Chloride	75-09-02	---	---	---	---		Methylene Chloride	75-09-02	---	---	---	---	
Methyl tert-butyl ether	1634-04-4	---	---	---	---		Methyl tert-butyl ether	1634-04-4	---	---	---	---		Methyl tert-butyl ether	1634-04-4	---	---	---	---		Methyl tert-butyl ether	1634-04-4	---	---	---	---	
Naphthalene	91-20-3	---	---	---	---		Naphthalene	91-20-3	---	---	---	---		Naphthalene	91-20-3	---	---	---	---		Naphthalene	91-20-3	---	---	---	---	
Nickel	7440-02-0	---	---	---	---		Nickel	7440-02-0	---	---	---	---		Nickel	7440-02-0	---	---	---	---		Nickel	7440-02-0	---	---	---	---	
PAH (not including Naphthalene)		---	---	---	---		PAH (not including Naphthalene)		---	---	---	---		PAH (not including Naphthalene)		---	---	---	---		PAH (not including Naphthalene)		---	---	---	---	
POM		---	---	---	---		POM		---	---	---	---		POM		---	---	---	---		POM		---	---	---	---	
Propylene	115-07-1	---	---	---	---		Propylene	115-07-1	---	---	---	---		Propylene	115-07-1	---	---	---	---		Propylene	115-07-1	---	---	---	---	
Selenium	7782-49-2	---	---	---	---		Selenium	7782-49-2	---	---	---	---		Selenium	7782-49-2	---	---	---	---		Selenium	7782-49-2	---	---	---	---	
Styrene	100-42-5	---	---	---	---		Styrene	100-42-5	---	---	---	---		Styrene	100-42-5	---	---	---	---		Styrene	100-42-5	---	---	---	---	
Tetrachloroethene	127-18-4	---	---	---	---		Tetrachloroethene	127-18-4	---	---	---	---		Tetrachloroethene	127-18-4	---	---	---	---		Tetrachloroethene	127-18-4	---	---	---	---	
Toluene	108-88-3	---	---	---	---		Toluene	108-88-3	---	---	---	---		Toluene	108-88-3	---	---	---	---		Toluene	108-88-3	---	---	---	---	
Trichloroethene	79-01-6	---	---	---	---		Trichloroethene	79-01-6	---	---	---	---		Trichloroethene	79-01-6	---	---	---	---		Trichloroethene	79-01-6	---	---	---	---	
Vinyl Acetate	108-05-4	---	---	---	---		Vinyl Acetate	108-05-4	---	---	---	---		Vinyl Acetate	108-05-4	---	---	---	---		Vinyl Acetate	108-05-4	---	---	---	---	
Vinyl Chloride	75-01-4	---	---	---	---		Vinyl Chloride	75-01-4	---	---	---	---		Vinyl Chloride	75-01-4	---	---	---	---		Vinyl Chloride	75-01-4	---	---	---	---	

Xylenes	1330-20-7	---	---	---	---	Xylenes	1330-20-7	---	---	---	---	Xylenes	1330-20-7	---	---	---	---	Xylenes	1330-20-7	---	---	---	---
Total HAPs	NA	---	---	---	---	Total HAPs	NA	---	---	---	---	Total HAPs	NA	---	---	---	---	Total HAPs	NA	---	---	---	---

9) ☒ Application is being submitted on a compact disc (CD), and the editable calculation spreadsheet(s) are included on the CD.

☐ Application is being submitted on paper, and editable calculation spreadsheet(s) are included on an enclosed CD.

Alternate Format

GI-07 Spreadsheet

Facility Emmison Summary
Air Quality Permit Program
Doc Type: Permit Application

3a) Delta ID No.:							3a) Delta ID No.:							3a) Delta ID No.:							3a) Delta ID No.:						
3b) Tempo SI ID No.:		EQU468					3b) Tempo SI ID No.:		EQU89					3b) Tempo SI ID No.:		EQU10					3b) Tempo SI ID No.:		EQU92					3b) Tempo SI ID No.:		EQU83				
Description		Battery Terminal Post Coater 15					Description		Battery Terminal Post Coater 17					Description		Battery Terminal Post Coater 19					Description		Battery Terminal Post Coater 20					Description		Battery Terminal Post Coater 21				
2c)	3d)	3e) Potential				2f)	2c)	3d)	3e) Potential				2f)	2c)	3d)	3e) Potential				2f)	2c)	3d)	3e) Potential				2f)	2c)	3d)	3e) Potential				2f)
Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy		Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy		Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy		Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy		Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy	
PM	NA	4.00E-02	1.75	0.02	---		PM	NA	---	---	---	---		PM	NA	---	---	---	---		PM	NA	---	---	---	---		PM	NA	---	---	---	---	
PM10	NA	4.00E-02	1.75	0.02	---		PM10	NA	---	---	---	---		PM10	NA	---	---	---	---		PM10	NA	---	---	---	---		PM10	NA	---	---	---	---	
PM2.5	NA	4.00E-02	1.75	0.02	---		PM2.5	NA	---	---	---	---		PM2.5	NA	---	---	---	---		PM2.5	NA	---	---	---	---		PM2.5	NA	---	---	---	---	
SO2	NA	---	---	---	---		SO2	NA	---	---	---	---		SO2	NA	---	---	---	---		SO2	NA	---	---	---	---		SO2	NA	---	---	---	---	
NOx	NA	---	---	---	---		NOx	NA	---	---	---	---		NOx	NA	---	---	---	---		NOx	NA	---	---	---	---		NOx	NA	---	---	---	---	
CO	NA	---	---	---	---		CO	NA	---	---	---	---		CO	NA	---	---	---	---		CO	NA	---	---	---	---		CO	NA	---	---	---	---	
VOC	NA	4.26	18.66	---	---		VOC	NA	1.10E-03	4.82E-03	---	---		VOC	NA	9.67E-05	4.24E-04	---	---		VOC	NA	1.12E-03	4.89E-03	---	---		VOC	NA	59.64	261.21	---	---	
Lead	NA	---	---	---	---		Lead	NA	---	---	---	---		Lead	NA	---	---	---	---		Lead	NA	---	---	---	---		Lead	NA	---	---	---	---		Lead	NA	---	---	---	---	
CO2	NA	---	---	---	---		CO2	NA	---	---	---	---		CO2	NA	---	---	---	---		CO2	NA	---	---	---	---		CO2	NA	---	---	---	---		CO2	NA	---	---	---	---	
CH4	NA	---	---	---	---		CH4	NA	---	---	---	---		CH4	NA	---	---	---	---		CH4	NA	---	---	---	---		CH4	NA	---	---	---	---		CH4	NA	---	---	---	---	
N2O	NA	---	---	---	---		N2O	NA	---	---	---	---		N2O	NA	---	---	---	---		N2O	NA	---	---	---	---		N2O	NA	---	---	---	---		N2O	NA	---	---	---	---	
Total GHG (CO2e)	NA	---	---	---	---		Total GHG (CO2e)	NA	---	---	---	---		Total GHG (CO2e)	NA	---	---	---	---		Total GHG (CO2e)	NA	---	---	---	---		Total GHG (CO2e)	NA	---	---	---	---		Total GHG (CO2e)	NA	---	---	---	---	
1,1,1-Trichloroethane	71-55-6	---	---	---	---		1,1,1-Trichloroethane	71-55-6	---	---	---	---		1,1,1-Trichloroethane	71-55-6	---	---	---	---		1,1,1-Trichloroethane	71-55-6	---	---	---	---		1,1,1-Trichloroethane	71-55-6	---	---	---	---		1,1,1-Trichloroethane	71-55-6	---	---	---	---	
1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---		1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---		1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---		1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---		1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---		1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---	
1,1,2-Trichloroethane	79-00-5	---	---	---	---		1,1,2-Trichloroethane	79-00-5	---	---	---	---		1,1,2-Trichloroethane	79-00-5	---	---	---	---		1,1,2-Trichloroethane	79-00-5	---	---	---	---		1,1,2-Trichloroethane	79-00-5	---	---	---	---		1,1,2-Trichloroethane	79-00-5	---	---	---	---	
1,1-Dichloroethane	75-34-3	---	---	---	---		1,1-Dichloroethane	75-34-3	---	---	---	---		1,1-Dichloroethane	75-34-3	---	---	---	---		1,1-Dichloroethane	75-34-3	---	---	---	---		1,1-Dichloroethane	75-34-3	---	---	---	---		1,1-Dichloroethane	75-34-3	---	---	---	---	
1,1-Dichloroethene	75-35-4	---	---	---	---		1,1-Dichloroethene	75-35-4	---	---	---	---		1,1-Dichloroethene	75-35-4	---	---	---	---		1,1-Dichloroethene	75-35-4	---	---	---	---		1,1-Dichloroethene	75-35-4	---	---	---	---		1,1-Dichloroethene	75-35-4	---	---	---	---	
1,2,4-Trichlorobenzene	120-82-1	---	---	---	---		1,2,4-Trichlorobenzene	120-82-1	---	---	---	---		1,2,4-Trichlorobenzene	120-82-1	---	---	---	---		1,2,4-Trichlorobenzene	120-82-1	---	---	---	---		1,2,4-Trichlorobenzene	120-82-1	---	---	---	---		1,2,4-Trichlorobenzene	120-82-1	---	---	---	---	
1,2-Dibromoethane	106-93-4	---	---	---	---		1,2-Dibromoethane	106-93-4	---	---	---	---		1,2-Dibromoethane	106-93-4	---	---	---	---		1,2-Dibromoethane	106-93-4	---	---	---	---		1,2-Dibromoethane	106-93-4	---	---	---	---		1,2-Dibromoethane	106-93-4	---	---	---	---	
1,2-Dichloroethane	107-06-2	---	---	---	---		1,2-Dichloroethane	107-06-2	---	---	---	---		1,2-Dichloroethane	107-06-2	---	---	---	---		1,2-Dichloroethane	107-06-2	---	---	---	---		1,2-Dichloroethane	107-06-2	---	---	---	---		1,2-Dichloroethane	107-06-2	---	---	---	---	
1,2-Dichloropropane	78-87-5	---	---	---	---		1,2-Dichloropropane	78-87-5	---	---	---	---		1,2-Dichloropropane	78-87-5	---	---	---	---		1,2-Dichloropropane	78-87-5	---	---	---	---		1,2-Dichloropropane	78-87-5	---	---	---	---		1,2-Dichloropropane	78-87-5	---	---	---	---	
1,4-Dichlorobenzene	106-46-7	---	---	---	---		1,4-Dichlorobenzene	106-46-7	---	---	---	---		1,4-Dichlorobenzene	106-46-7	---	---	---	---		1,4-Dichlorobenzene	106-46-7	---	---	---	---		1,4-Dichlorobenzene	106-46-7	---	---	---	---		1,4-Dichlorobenzene	106-46-7	---	---	---	---	
4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---		4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---		4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---		4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---		4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---		4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---	
Acetaldehyde	75070	---	---	---	---		Acetaldehyde	75070	---	---	---	---		Acetaldehyde	75070	---	---	---	---		Acetaldehyde	75070	---	---	---	---		Acetaldehyde	75070	---	---	---	---		Acetaldehyde	75070	---	---	---	---	
1,3-Butadiene	106990	---	---	---	---		1,3-Butadiene	106990	---	---	---	---		1,3-Butadiene	106990	---	---	---	---		1,3-Butadiene	106990	---	---	---	---		1,3-Butadiene	106990	---	---	---	---		1,3-Butadiene	106990	---	---	---	---	
Arsenic	7440-38-2	---	---	---	---		Arsenic	7440-38-2	---	---	---	---		Arsenic	7440-38-2	---	---	---	---		Arsenic	7440-38-2	---	---	---	---		Arsenic	7440-38-2	---	---	---	---		Arsenic	7440-38-2	---	---	---	---	
Benzene	71-43-2	---	---	---	---		Benzene	71-43-2	---	---	---	---		Benzene	71-43-2	---	---	---	---		Benzene	71-43-2	---	---	---	---		Benzene	71-43-2	---	---	---	---		Benzene	71-43-2	---	---	---	---	
Benzyl chloride	100-44-7	---	---	---	---		Benzyl chloride	100-44-7	---	---	---	---		Benzyl chloride	100-44-7	---	---	---	---		Benzyl chloride	100-44-7	---	---	---	---		Benzyl chloride	100-44-7	---	---	---	---		Benzyl chloride	100-44-7	---	---	---	---	
Biomethanol	75-25-2	---	---	---	---		Biomethanol	75-25-2	---	---	---	---		Biomethanol	75-25-2	---	---	---	---		Biomethanol	75-25-2	---	---	---	---		Biomethanol	75-25-2	---	---	---	---		Biomethanol	75-25-2	---	---	---	---	
Bromomethane	74-83-9	---	---	---	---		Bromomethane	74-83-9	---	---	---	---		Bromomethane	74-83-9	---	---	---	---		Bromomethane	74-83-9	---	---	---	---		Bromomethane	74-83-9	---	---	---	---		Bromomethane	74-83-9	---	---	---	---	
Beryllium	7440-41-7	---	---	---	---		Beryllium	7440-41-7	---	---	---	---		Beryllium	7440-41-7	---	---	---	---		Beryllium	7440-41-7	---	---	---	---		Beryllium	7440-41-7	---	---	---	---		Beryllium	7440-41-7	---	---	---	---	
Cadmium	7440-43-9	---	---	---	---		Cadmium	7440-43-9	---	---	---	---		Cadmium	7440-43-9	---	---	---	---		Cadmium	7440-43-9	---	---	---	---		Cadmium	7440-43-9	---	---	---	---		Cadmium	7440-43-9	---	---	---	---	
Carbon disulfide	75-15-0	---	---	---	---		Carbon disulfide	75-15-0	---	---	---	---		Carbon disulfide	75-15-0	---	---	---	---		Carbon disulfide	75-15-0	---	---	---	---		Carbon disulfide	75-15-0	---	---	---	---		Carbon disulfide	75-15-0	---	---	---	---	
Carbon tetrachloride	56-23-5	---	---	---	---		Carbon tetrachloride	56-23-5	---	---	---	---		Carbon tetrachloride	56-23-5	---	---	---	---		Carbon tetrachloride	56-23-5	---	---	---	---		Carbon tetrachloride	56-23-5	---	---	---	---		Carbon tetrachloride	56-23-5	---	---	---	---	
Chromium	7440-47-3	---	---	---	---		Chromium	7440-47-3	---	---	---	---		Chromium	7440-47-3	---	---	---	---		Chromium	7440-47-3	---	---	---	---		Chromium	7440-47-3	---	---	---	---		Chromium	7440-47-3	---	---	---	---	
Chlorobenzene	108-90-7	---	---	---	---		Chlorobenzene	108-90-7	---	---	---	---		Chlorobenzene	108-90-7	---	---	---	---		Chlorobenzene	108-90-7	---	---	---	---		Chlorobenzene	108-90-7	---	---	---	---		Chlorobenzene	108-90-7	---	---	---	---	
Chloroethane	75-00-3	---	---	---	---		Chloroethane	75-00-3	---	---	---	---		Chloroethane	75-00-3	---	---	---	---		Chloroethane	75-00-3	---	---	---	---		Chloroethane	75-00-3	---	---	---	---		Chloroethane	75-00-3	---	---	---	---	
Chloroform	67-66-3	---	---	---	---		Chloroform	67-66-3	---	---	---	---		Chloroform	67-66-3	---	---	---	---		Chloroform	67-66-3	---	---	---	---		Chloroform	67-66-3	---	---	---	---		Chloroform	67-66-3	---	---	---	---	
Chloromethane	74-87-2	---	---	---	---		Chloromethane	74-87-2	---	---	---	---		Chloromethane	74-87-2	---	---	---	---		Chloromethane	74-87-2	---	---	---	---		Chloromethane	74-87-2	---	---	---	---		Chloromethane	74-87-2	---	---	---	---	
Cobalt	7440-48-4	---	---	---	---		Cobalt	7440-48-4	---	---	---	---		Cobalt	7440-48-4	---	---	---	---		Cobalt	7440-48-4	---	---	---	---		Cobalt	7440-48-4	---	---	---	---		Cobalt	7440-48-4	---	---	---	---	
Dichlorobenzene	25321-22-6	---	---	---	---		Dichlorobenzene	25321-22-6	---	---	---	---		Dichlorobenzene	25321-22-6	---	---	---	---		Dichlorobenzene	25321-22-6	---	---	---	---		Dichlorobenzene	25321-22-6	---	---	---	---		Dichlorobenzene	25321-22-6	---	---	---	---	
Ethyl Benzene	100-41-4	---	---	---	---		Ethyl Benzene	100-41-4	---	---	---	---		Ethyl Benzene	100-41-4	---	---	---	---		Ethyl Benzene	100-41-4	---	---	---	---		Ethyl Benzene	100-41-4	---	---	---	---		Ethyl Benzene	100-41-4	---	---	---	---	
Formaldehyde	50-00-0	---	---	---	---		Formaldehyde	50-00-0	---	---	---	---		Formaldehyde	50-00-0	---	---	---	---		Formaldehyde	50-00-0	---	---	---	---		Formaldehyde	50-00-0	---	---	---	---		Formaldehyde	50-00-0	---	---	---	---	
Hexachlorobutadiene	87-68-3	---	---	---	---		Hexachlorobutadiene	87-68-3	---	---	---	---		Hexachlorobutadiene	87-68-3	---	---	---	---		Hexachlorobutadiene	87-68-3	---	---	---	---		Hexachlorobutadiene	87-68-3	---	---	---	---		Hexachlorobutadiene	87-68-3	---	---	---	---	
Hexane	110-54-3	---	---	---	---		Hexane	110-54-3	---	---	---	---		Hexane	110-54-3	---	---	---	---		Hexane	110-54-3	---	---	---	---		Hexane	110-54-3	---	---	---	---		Hexane	110-54-3	---	---	---	---	
Manganese	7439-96-5	---	---	---	---		Manganese	7439-96-5	---	---	---	---		Manganese	7439-96-5	---	---	---	---		Manganese	7439-96-5	---	---	---	---		Manganese	7439-96-5	---	---	---	---		Manganese	7439-96-5	---	---	---	---	
Mercury	7439-97-6	---	---	---	---		Mercury	7439-97-6	---	---	---	---		Mercury	7439-97-6	---	---	---	---		Mercury	7439-97-6	---	---	---	---		Mercury	7439-97-6	---	---	---	---		Mercury	7439-97-6	---	---	---	---	
Methylene Chloride	75-09-02	---	---	---	---		Methylene Chloride	75-09-02	---	---	---	---		Methylene Chloride	75-09-02	---	---	---	---		Methylene Chloride	75-09-02	---	---	---	---		Methylene Chloride	75-09-02	---	---	---	---		Methylene Chloride	75-09-02	---	---	---	---	
Methyl tert-butyl ether	1634-04-4	---	---	---	---		Methyl tert-butyl ether	1634-04-4	---	---	---	---		Methyl tert-butyl ether	1634-04-4	---	---	---	---		Methyl tert-butyl ether	1634-04-4	---	---	---	---		Methyl tert-butyl ether	1634-04-4	---	---	---	---		Methyl tert-butyl ether	1634-04-4	---	---	---	---	
Naphthalene	91-20-3	---	---	---	---		Naphthalene	91-20-3	---	---	---	---		Naphthalene	91-20-3	---	---	---	---		Naphthalene	91-20-3	---	---	---	---		Naphthalene	91-20-3	---	---	---	---		Naphthalene	91-20-3	---	---	---	---	
Nickel	7440-02-0	---	---	---	---		Nickel	7440-02-0	---	---	---	---		Nickel	7440-02-0	---	---	---	---		Nickel	7440-02-0	---	---	---	---		Nickel	7440-02-0	---	---	---	---		Nickel	7440-02-0	---	---	---	---	
PAH (not including Naphthalene)		---	---	---	---		PAH (not including Naphthalene)		---	---	---	---		PAH (not including Naphthalene)		---	---	---	---		PAH (not including Naphthalene)		---	---	---	---		PAH (not including Naphthalene)		---	---	---	---		PAH (not including Naphthalene)		---	---	---	---	
POM		POM					POM							POM							POM							POM					
Propylene	115-07-1	---	---	---	---		Propylene	115-07-1	---	---	---	---		Propylene	115-07-1	---	---	---	---		Propylene	115-07-1	---	---	---	---		Propylene	115-07-1	---	---	---	---		Propylene	115-07-1	---	---	---	---	
Selenium	7782-49-2	---	---	---	---		Selenium	7782-49-2	---	---	---	---		Selenium	7782-49-2	---	---	---	---		Selenium	7782-49-2	---	---	---	---		Selenium	7782-49-2	---	---	---	---		Selenium	7782-49-2	---	---	---	---	
Styrene	100-42-5	---	---	---	---		Styrene	100-42-5	---	---	---	---		Styrene	100-42-5	---	---	---	---		Styrene	100-42-5	---	---	---	---		Styrene	100-42-5	---	---	---	---		Styrene	100-42-5	---	---	---	---	
Tetrachloroethene	127-18-4	---	---	---	---		Tetrachloroethene	127-18-4	---	---	---	---		Tetrachloroethene	127-18-4	---	---	---	---		Tetrachloroethene	127-18-4	---	---	---	---		Tetrachloroethene	127-18-4	---	---	---	---		Tetrachloroethene	127-18-4	---	---	---	---	
Toluene	108-88-3	---	---	---	---		Toluene	108-88-3	---	---	---	---		Toluene	108-88-3	---	---	---	---		Toluene	108-88-3	---	---	---	---		Toluene	108-88-3	---	---	---	---		Toluene	108-88-3	---	---	---	---	
Trichloroethene	79-01-6	---	---	---	---		Trichloroethene	79-01-6	---	---	---	---		Trichloroethene	79-01-6	---	---	---	---		Trichloroethene	79-01-6	---	---	---	---		Trichloroethene	79-01-6	---	---	---	---		Trichloroethene	79-01-6	---	---	---	---	
Vinyl Acetate	108-05-4	---	---	---	---		Vinyl Acetate	108-05-4	---	---	---	---		Vinyl Acetate	108-05-4	---	---	---	---		Vinyl Acetate	108-05-4	---	---	---	---		Vinyl Acetate	108-05-4	---	---	---	---		Vinyl Acetate	108-05-4	---	---	---	---	
Vinyl Chloride	75-01-4	---	---	---	---		Vinyl Chloride	75-01-4	---	---	---	---		Vinyl Chloride	75-01-4	---	---	---	---		Vinyl Chloride	75-01-4	---	---	---	---		Vinyl Chloride	75-01-4	---	---	---	---		Vinyl Chloride	75-01-4	---	---	---	---	
Xylenes	1330-20-7	---	---	---	---		Xylenes	1330-20-7	---	---	---	---		Xylenes	1330-20-7	---	---	---	---		Xylenes	1330-20-7	---	---	---	---		Xylenes	1330-20-7	---	---	---	---		Xylenes	1330-20-7	---	---	---	---	
Total HAPs	NA	---	---	---	---		Total HAPs	NA	---	---	---	---		Total HAPs	NA	---	---	---	---		Total HAPs	NA	---	---	---	---		Total HAPs	NA	---	---	---	---		Total HAPs	NA	---	---	---	---	

Alternate Format

GI-07 Spreadsheet

Facility Emmison Summary
Air Quality Permit Program
Doc Type: Permit Application

3a) Delta ID No.:						3a) Delta ID No.:						3a) Delta ID No.:						3a) Delta ID No.:						3a) Delta ID No.:					
3b) Tempo SI ID No.:		EQUI94				3b) Tempo SI ID No.:	EQUI95					3b) Tempo SI ID No.:	EQUI97						EQUI98					3b) Tempo SI ID No.:	EQUI99				
Description		Battery Terminal Post Coaster 22				Description	Battery Terminal Post Coaster 23					Description	Battery Terminal Post Coaster 25					Description	Battery Terminal Post Coaster 26					Description	Battery Terminal Post Coaster 27				
3c)	3d)	3e) Potential			3f)	3c)	3d)	3e) Potential			3f)	3c)	3d)	3e) Potential			3f)	3c)	3d)	3e) Potential			3f)	3c)	3d)	3e) Potential			3f)
Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy	Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy	Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy	Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy	Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy
PM	NA	---	---	---	---	PM	NA	1.99E-03	0.87	8.71E-03	---	PM	NA	---	---	---	---	PM	NA	---	---	---	---	PM	NA	---	---	---	---
PM10	NA	---	---	---	---	PM10	NA	1.99E-03	0.87	8.71E-03	---	PM10	NA	---	---	---	---	PM10	NA	---	---	---	---	PM10	NA	---	---	---	---
PM2.5	NA	---	---	---	---	PM2.5	NA	1.99E-03	0.87	8.71E-03	---	PM2.5	NA	---	---	---	---	PM2.5	NA	---	---	---	---	PM2.5	NA	---	---	---	---
SO2	NA	---	---	---	---	SO2	NA	---	---	---	---	SO2	NA	---	---	---	---	SO2	NA	---	---	---	---	SO2	NA	---	---	---	---
NOx	NA	---	---	---	---	NOx	NA	---	---	---	---	NOx	NA	---	---	---	---	NOx	NA	---	---	---	---	NOx	NA	---	---	---	---
CO	NA	---	---	---	---	CO	NA	---	---	---	---	CO	NA	---	---	---	---	CO	NA	---	---	---	---	CO	NA	---	---	---	---
VOC	NA	13.53	59.25	---	---	VOC	NA	2.12	9.28	---	---	VOC	NA	2.96E-04	1.30E-03	---	---	VOC	NA	1.83	8.01	---	---	VOC	NA	15.71	68.82	---	---
Lead	NA	---	---	---	---	Lead	NA	---	---	---	---	Lead	NA	---	---	---	---	Lead	NA	---	---	---	---	Lead	NA	---	---	---	---
CO2	NA	---	---	---	---	CO2	NA	---	---	---	---	CO2	NA	---	---	---	---	CO2	NA	---	---	---	---	CO2	NA	---	---	---	---
CH4	NA	---	---	---	---	CH4	NA	---	---	---	---	CH4	NA	---	---	---	---	CH4	NA	---	---	---	---	CH4	NA	---	---	---	---
N2O	NA	---	---	---	---	N2O	NA	---	---	---	---	N2O	NA	---	---	---	---	N2O	NA	---	---	---	---	N2O	NA	---	---	---	---
Total GHG (CO2e)	NA	---	---	---	---	Total GHG (CO2e)	NA	---	---	---	---	Total GHG (CO2e)	NA	---	---	---	---	Total GHG (CO2e)	NA	---	---	---	---	Total GHG (CO2e)	NA	---	---	---	---
1,1,1-Trichloroethane	71-55-6	---	---	---	---	1,1,1-Trichloroethane	71-55-6	---	---	---	---	1,1,1-Trichloroethane	71-55-6	---	---	---	---	1,1,1-Trichloroethane	71-55-6	---	---	---	---	1,1,1-Trichloroethane	71-55-6	---	---	---	---
1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---	1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---	1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---	1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---	1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---
1,1,2-Trichloroethane	79-00-5	---	---	---	---	1,1,2-Trichloroethane	79-00-5	---	---	---	---	1,1,2-Trichloroethane	79-00-5	---	---	---	---	1,1,2-Trichloroethane	79-00-5	---	---	---	---	1,1,2-Trichloroethane	79-00-5	---	---	---	---
1,1-Dichloroethane	75-34-3	---	---	---	---	1,1-Dichloroethane	75-34-3	---	---	---	---	1,1-Dichloroethane	75-34-3	---	---	---	---	1,1-Dichloroethane	75-34-3	---	---	---	---	1,1-Dichloroethane	75-34-3	---	---	---	---
1,1-Dichloroethene	75-35-4	---	---	---	---	1,1-Dichloroethene	75-35-4	---	---	---	---	1,1-Dichloroethene	75-35-4	---	---	---	---	1,1-Dichloroethene	75-35-4	---	---	---	---	1,1-Dichloroethene	75-35-4	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	---	---	---	---	1,2,4-Trichlorobenzene	120-82-1	---	---	---	---	1,2,4-Trichlorobenzene	120-82-1	---	---	---	---	1,2,4-Trichlorobenzene	120-82-1	---	---	---	---	1,2,4-Trichlorobenzene	120-82-1	---	---	---	---
1,2-Dibromoethane	106-93-4	---	---	---	---	1,2-Dibromoethane	106-93-4	---	---	---	---	1,2-Dibromoethane	106-93-4	---	---	---	---	1,2-Dibromoethane	106-93-4	---	---	---	---	1,2-Dibromoethane	106-93-4	---	---	---	---
1,2-Dichloroethane	107-06-2	---	---	---	---	1,2-Dichloroethane	107-06-2	---	---	---	---	1,2-Dichloroethane	107-06-2	---	---	---	---	1,2-Dichloroethane	107-06-2	---	---	---	---	1,2-Dichloroethane	107-06-2	---	---	---	---
1,2-Dichloropropane	78-87-5	---	---	---	---	1,2-Dichloropropane	78-87-5	---	---	---	---	1,2-Dichloropropane	78-87-5	---	---	---	---	1,2-Dichloropropane	78-87-5	---	---	---	---	1,2-Dichloropropane	78-87-5	---	---	---	---
1,4-Dichlorobenzene	106-46-7	---	---	---	---	1,4-Dichlorobenzene	106-46-7	---	---	---	---	1,4-Dichlorobenzene	106-46-7	---	---	---	---	1,4-Dichlorobenzene	106-46-7	---	---	---	---	1,4-Dichlorobenzene	106-46-7	---	---	---	---
4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---	4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---	4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---	4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---	4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---
Acetaldehyde	75070	---	---	---	---	Acetaldehyde	75070	---	---	---	---	Acetaldehyde	75070	---	---	---	---	Acetaldehyde	75070	---	---	---	---	Acetaldehyde	75070	---	---	---	---
1,3 Butadiene	106990	---	---	---	---	1,3 Butadiene	106990	---	---	---	---	1,3 Butadiene	106990	---	---	---	---	1,3 Butadiene	106990	---	---	---	---	1,3 Butadiene	106990	---	---	---	---
Arsenic	7440-38-2	---	---	---	---	Arsenic	7440-38-2	---	---	---	---	Arsenic	7440-38-2	---	---	---	---	Arsenic	7440-38-2	---	---	---	---	Arsenic	7440-38-2	---	---	---	---
Benzene	71-43-2	---	---	---	---	Benzene	71-43-2	---	---	---	---	Benzene	71-43-2	---	---	---	---	Benzene	71-43-2	---	---	---	---	Benzene	71-43-2	---	---	---	---
Benzyl chloride	100-44-7	---	---	---	---	Benzyl chloride	100-44-7	---	---	---	---	Benzyl chloride	100-44-7	---	---	---	---	Benzyl chloride	100-44-7	---	---	---	---	Benzyl chloride	100-44-7	---	---	---	---
Biomethanol	75-09-2	---	---	---	---	Biomethanol	75-09-2	---	---	---	---	Biomethanol	75-09-2	---	---	---	---	Biomethanol	75-09-2	---	---	---	---	Biomethanol	75-09-2	---	---	---	---
Bromomethane	74-83-9	---	---	---	---	Bromomethane	74-83-9	---	---	---	---	Bromomethane	74-83-9	---	---	---	---	Bromomethane	74-83-9	---	---	---	---	Bromomethane	74-83-9	---	---	---	---
Beryllium	7440-41-7	---	---	---	---	Beryllium	7440-41-7	---	---	---	---	Beryllium	7440-41-7	---	---	---	---	Beryllium	7440-41-7	---	---	---	---	Beryllium	7440-41-7	---	---	---	---
Cadmium	7440-43-9	---	---	---	---	Cadmium	7440-43-9	---	---	---	---	Cadmium	7440-43-9	---	---	---	---	Cadmium	7440-43-9	---	---	---	---	Cadmium	7440-43-9	---	---	---	---
Carbon disulfide	75-15-0	---	---	---	---	Carbon disulfide	75-15-0	---	---	---	---	Carbon disulfide	75-15-0	---	---	---	---	Carbon disulfide	75-15-0	---	---	---	---	Carbon disulfide	75-15-0	---	---	---	---
Carbon tetrachloride	56-23-5	---	---	---	---	Carbon tetrachloride	56-23-5	---	---	---	---	Carbon tetrachloride	56-23-5	---	---	---	---	Carbon tetrachloride	56-23-5	---	---	---	---	Carbon tetrachloride	56-23-5	---	---	---	---
Chromium	7440-47-3	---	---	---	---	Chromium	7440-47-3	---	---	---	---	Chromium	7440-47-3	---	---	---	---	Chromium	7440-47-3	---	---	---	---	Chromium	7440-47-3	---	---	---	---
Chlorobenzene	108-90-7	---	---	---	---	Chlorobenzene	108-90-7	---	---	---	---	Chlorobenzene	108-90-7	---	---	---	---	Chlorobenzene	108-90-7	---	---	---	---	Chlorobenzene	108-90-7	---	---	---	---
Chloroethane	75-00-3	---	---	---	---	Chloroethane	75-00-3	---	---	---	---	Chloroethane	75-00-3	---	---	---	---	Chloroethane	75-00-3	---	---	---	---	Chloroethane	75-00-3	---	---	---	---
Chloroform	67-66-3	---	---	---	---	Chloroform	67-66-3	---	---	---	---	Chloroform	67-66-3	---	---	---	---	Chloroform	67-66-3	---	---	---	---	Chloroform	67-66-3	---	---	---	---
Chloromethane	74-87-2	---	---	---	---	Chloromethane	74-87-2	---	---	---	---	Chloromethane	74-87-2	---	---	---	---	Chloromethane	74-87-2	---	---	---	---	Chloromethane	74-87-2	---	---	---	---
Cobalt	7440-48-4	---	---	---	---	Cobalt	7440-48-4	---	---	---	---	Cobalt	7440-48-4	---	---	---	---	Cobalt	7440-48-4	---	---	---	---	Cobalt	7440-48-4	---	---	---	---
Dichlorobenzene	25321-22-6	---	---	---	---	Dichlorobenzene	25321-22-6	---	---	---	---	Dichlorobenzene	25321-22-6	---	---	---	---	Dichlorobenzene	25321-22-6	---	---	---	---	Dichlorobenzene	25321-22-6	---	---	---	---
Ethyl Benzene	100-41-4	---	---	---	---	Ethyl Benzene	100-41-4	---	---	---	---	Ethyl Benzene	100-41-4	---	---	---	---	Ethyl Benzene	100-41-4	---	---	---	---	Ethyl Benzene	100-41-4	---	---	---	---
Formaldehyde	50-00-0	---	---	---	---	Formaldehyde	50-00-0	---	---	---	---	Formaldehyde	50-00-0	---	---	---	---	Formaldehyde	50-00-0	---	---	---	---	Formaldehyde	50-00-0	---	---	---	---
Hexachlorobutadiene	87-68-3	---	---	---	---	Hexachlorobutadiene	87-68-3	---	---	---	---	Hexachlorobutadiene	87-68-3	---	---	---	---	Hexachlorobutadiene	87-68-3	---	---	---	---	Hexachlorobutadiene	87-68-3	---	---	---	---
Hexane	110-54-3	---	---	---	---	Hexane	110-54-3	---	---	---	---	Hexane	110-54-3	---	---	---	---	Hexane	110-54-3	---	---	---	---	Hexane	110-54-3	---	---	---	---
Manganese	7439-96-5	---	---	---	---	Manganese	7439-96-5	---	---	---	---	Manganese	7439-96-5	---	---	---	---	Manganese	7439-96-5	---	---	---	---	Manganese	7439-96-5	---	---	---	---
Mercury	7439-97-6	---	---	---	---	Mercury	7439-97-6	---	---	---	---	Mercury	7439-97-6	---	---	---	---	Mercury	7439-97-6	---	---	---	---	Mercury	7439-97-6	---	---	---	---
Methylene Chloride	75-09-02	---	---	---	---	Methylene Chloride	75-09-02	---	---	---	---	Methylene Chloride	75-09-02	---	---	---	---	Methylene Chloride	75-09-02	---	---	---	---	Methylene Chloride	75-09-02	---	---	---	---
Methyl tert-butyl ether	1634-04-4	---	---	---	---	Methyl tert-butyl ether	1634-04-4	---	---	---	---	Methyl tert-butyl ether	1634-04-4	---	---	---	---	Methyl tert-butyl ether	1634-04-4	---	---	---	---	Methyl tert-butyl ether	1634-04-4	---	---	---	---
Naphthalene	91-20-3	---	---	---	---	Naphthalene	91-20-3	---	---	---	---	Naphthalene	91-20-3	---	---	---	---	Naphthalene	91-20-3	---	---	---	---	Naphthalene	91-20-3	---	---	---	---
Nickel	7440-02-0	---	---	---	---	Nickel	7440-02-0	---	---	---	---	Nickel	7440-02-0	---	---	---	---	Nickel	7440-02-0	---	---	---	---	Nickel	7440-02-0	---	---	---	---
PAH (not including Naphthalene)		---	---	---	---	PAH (not including Naphthalene)		---	---	---	---	PAH (not including Naphthalene)		---	---	---	---	PAH (not including Naphthalene)		---	---	---	---	PAH (not including Naphthalene)		---	---	---	---
POM		---	---	---	---	POM		---	---	---	---	POM		---	---	---	---	POM		---	---	---	---	POM		---	---	---	---
Propylene	115-07-1	---	---	---	---	Propylene	115-07-1	---	---	---	---	Propylene	115-07-1	---	---	---	---	Propylene	115-07-1	---	---	---	---	Propylene	115-07-1	---	---	---	---
Selenium	7782-49-2	---	---	---	---	Selenium	7782-49-2	---	---	---	---	Selenium	7782-49-2	---	---	---	---	Selenium	7782-49-2	---	---	---	---	Selenium	7782-49-2	---	---	---	---
Styrene	100-42-5	---	---	---	---	Styrene	100-42-5	---	---	---	---	Styrene	100-42-5	---	---	---	---	Styrene	100-42-5	---	---	---	---	Styrene	100-42-5	---	---	---	---
Tetrachloroethene	127-18-4	---	---	---	---	Tetrachloroethene	127-18-4	---	---	---	---	Tetrachloroethene	127-18-4	---	---	---	---	Tetrachloroethene	127-18-4	---	---	---	---	Tetrachloroethene	127-18-4	---	---	---	---
Toluene	108-88-3	---	---	---	---	Toluene	108-88-3	---	---	---	---	Toluene	108-88-3	---	---	---	---	Toluene	108-88-3	---	---	---	---	Toluene	108-88-3	---	---	---	---
Trichloroethene	79-01-6	---	---	---	---	Trichloroethene	79-01-6	---	---	---	---	Trichloroethene	79-01-6	---	---	---	---	Trichloroethene	79-01-6	---	---	---	---	Trichloroethene	79-01-6	---	---	---	---
Vinyl Acetate	108-05-4	---	---	---	---	Vinyl Acetate	108-05-4	---	---	---	---	Vinyl Acetate	108-05-4	---	---	---	---	Vinyl Acetate	108-05-4	---	---	---	---	Vinyl Acetate	108-05-4	---	---	---	---
Vinyl Chloride	75-01-4	---	---	---	---	Vinyl Chloride	75-01-4	---	---	---	---	Vinyl Chloride	75-01-4	---	---	---	---	Vinyl Chloride	75-01-4	---	---	---	---	Vinyl Chloride	75-01-4	---	---	---	---
Xylenes	1330-20-7	---	---	---	---	Xylenes	1330-20-7	---	---	---	---	Xylenes	1330-20-7	---	---	---	---	Xylenes	1330-20-7	---	---	---	---	Xylenes	1330-20-7	---	---	---	---
Total HAPs	NA	---	---	---	---	Total HAPs	NA	---	---	---	---	Total HAPs	NA	---	---	---	---	Total HAPs	NA	---	---	---	---	Total HAPs	NA	---	---	---	---

Alternate Format

GI-07 Spreadsheet

Facility Emmison Summary

Air Quality Permit Program

Doc Type: Permit Application

3a) Delta ID No.:					
3b) Tempo SI ID No.:		EQUI100			
Description		Battery Terminal Post Coater 28			
3c) Pollutant Name	**3d)** CAS #	**3e)** Potential Lbs per Hr	Unc tpy	Limited tpy	**3f)** Actual tpy
PM	NA	---	---	---	---
PM10	NA	---	---	---	---
PM2.5	NA	---	---	---	---
SO2	NA	---	---	---	---
NOx	NA	---	---	---	---
CO	NA	---	---	---	---
VOC	NA	3.46	15.16	---	---
Lead	NA	---	---	---	---
CO2	NA	---	---	---	---
CH4	NA	---	---	---	---
N2O	NA	---	---	---	---
Total GHG (CO2e)	NA	---	---	---	---
1,1,1-Trichloroethane	71-55-6	---	---	---	---
1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---
1,1,2-Trichloroethane	79-00-5	---	---	---	---
1,1-Dichloroethane	75-34-3	---	---	---	---
1,1-Dichloroethene	75-35-4	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	---	---	---	---
1,2-Dibromoethane	106-93-4	---	---	---	---
1,2-Dichloroethane	107-06-2	---	---	---	---
1,2-Dichloropropane	78-87-5	---	---	---	---
1,4-Dichlorobenzene	106-46-7	---	---	---	---
4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---
Acetaldehyde	75070	---	---	---	---
1,3-Butadiene	106990	---	---	---	---
Arsenic	7440-38-2	---	---	---	---
Benzene	71-43-2	---	---	---	---
Benzyl chloride	100-44-7	---	---	---	---
Bromoform	75-25-2	---	---	---	---
Bromomethane	74-83-9	---	---	---	---
Beryllium	7440-41-7	---	---	---	---
Cadmium	7440-43-9	---	---	---	---
Carbon disulfide	75-15-0	---	---	---	---
Carbon tetrachloride	56-23-5	---	---	---	---
Chromium	7440-47-3	---	---	---	---
Chlorobenzene	108-90-7	---	---	---	---
Chloroethane	75-00-3	---	---	---	---
Chloroform	67-66-3	---	---	---	---
Chloromethane	74-87-2	---	---	---	---
Cobalt	7440-48-4	---	---	---	---
Dichlorobenzene	25321-22-6	---	---	---	---
Ethyl Benzene	100-41-4	---	---	---	---
Formaldehyde	50-00-0	---	---	---	---
Hexachlorobutadiene	87-68-3	---	---	---	---
Hexane	110-54-3	---	---	---	---
Manganese	7439-96-5	---	---	---	---
Mercury	7439-97-6	---	---	---	---
Methylene Chloride	75-09-02	---	---	---	---
Methyl-tert-butyl ether	1634-04-4	---	---	---	---
Naphthalene	91-20-3	---	---	---	---
Nickel	7440-02-0	---	---	---	---
PAH (not including Napthalene)		---	---	---	---
POM		---	---	---	---
Propylene	115-07-1	---	---	---	---
Selenium	7782-49-2	---	---	---	---
Styrene	100-42-5	---	---	---	---
Tetrachloroethene	127-18-4	---	---	---	---
Toluene	108-88-3	---	---	---	---
Trichloroethene	79-01-6	---	---	---	---
Vinyl Acetate	108-05-4	---	---	---	---
Vinyl Chloride	75-01-4	---	---	---	---
Xylenes	1330-20-7	---	---	---	---
Total HAPs	NA	---	---	---	---

3a) Delta ID No.:					
3b) Tempo SI ID No.:		EQUI172			
Description		Battery Terminal Post Coater 29			
3c) Pollutant Name	**3d)** CAS #	**3e)** Potential Lbs per Hr	Unc tpy	Limited tpy	**3f)** Actual tpy
PM	NA	---	---	---	---
PM10	NA	---	---	---	---
PM2.5	NA	---	---	---	---
SO2	NA	---	---	---	---
NOx	NA	---	---	---	---
CO	NA	---	---	---	---
VOC	NA	2.47E-03	0.01	---	---
Lead	NA	---	---	---	---
CO2	NA	---	---	---	---
CH4	NA	---	---	---	---
N2O	NA	---	---	---	---
Total GHG (CO2e)	NA	---	---	---	---
1,1,1-Trichloroethane	71-55-6	---	---	---	---
1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---
1,1,2-Trichloroethane	79-00-5	---	---	---	---
1,1-Dichloroethane	75-34-3	---	---	---	---
1,1-Dichloroethene	75-35-4	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	---	---	---	---
1,2-Dibromoethane	106-93-4	---	---	---	---
1,2-Dichloroethane	107-06-2	---	---	---	---
1,2-Dichloropropane	78-87-5	---	---	---	---
1,4-Dichlorobenzene	106-46-7	---	---	---	---
4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---
Acetaldehyde	75070	---	---	---	---
1,3-Butadiene	106990	---	---	---	---
Arsenic	7440-38-2	---	---	---	---
Benzene	71-43-2	---	---	---	---
Benzyl chloride	100-44-7	---	---	---	---
Bromoform	75-25-2	---	---	---	---
Bromomethane	74-83-9	---	---	---	---
Beryllium	7440-41-7	---	---	---	---
Cadmium	7440-43-9	---	---	---	---
Carbon disulfide	75-15-0	---	---	---	---
Carbon tetrachloride	56-23-5	---	---	---	---
Chromium	7440-47-3	---	---	---	---
Chlorobenzene	108-90-7	---	---	---	---
Chloroethane	75-00-3	---	---	---	---
Chloroform	67-66-3	---	---	---	---
Chloromethane	74-87-2	---	---	---	---
Cobalt	7440-48-4	---	---	---	---
Dichlorobenzene	25321-22-6	---	---	---	---
Ethyl Benzene	100-41-4	---	---	---	---
Formaldehyde	50-00-0	---	---	---	---
Hexachlorobutadiene	87-68-3	---	---	---	---
Hexane	110-54-3	---	---	---	---
Manganese	7439-96-5	---	---	---	---
Mercury	7439-97-6	---	---	---	---
Methylene Chloride	75-09-02	---	---	---	---
Methyl-tert-butyl ether	1634-04-4	---	---	---	---
Naphthalene	91-20-3	---	---	---	---
Nickel	7440-02-0	---	---	---	---
PAH (not including Napthalene)		---	---	---	---
POM		---	---	---	---
Propylene	115-07-1	---	---	---	---
Selenium	7782-49-2	---	---	---	---
Styrene	100-42-5	---	---	---	---
Tetrachloroethene	127-18-4	---	---	---	---
Toluene	108-88-3	---	---	---	---
Trichloroethene	79-01-6	---	---	---	---
Vinyl Acetate	108-05-4	---	---	---	---
Vinyl Chloride	75-01-4	---	---	---	---
Xylenes	1330-20-7	---	---	---	---
Total HAPs	NA	---	---	---	---

3a) Delta ID No.:					
3b) Tempo SI ID No.:		EQUI116			
Description		Battery Terminal Post Coater 30			
3c) Pollutant Name	**3d)** CAS #	**3e)** Potential Lbs per Hr	Unc tpy	Limited tpy	**3f)** Actual tpy
PM	NA	---	---	---	---
PM10	NA	---	---	---	---
PM2.5	NA	---	---	---	---
SO2	NA	---	---	---	---
NOx	NA	---	---	---	---
CO	NA	---	---	---	---
VOC	NA	9.24E-04	4.05E-03	---	---
Lead	NA	---	---	---	---
CO2	NA	---	---	---	---
CH4	NA	---	---	---	---
N2O	NA	---	---	---	---
Total GHG (CO2e)	NA	---	---	---	---
1,1,1-Trichloroethane	71-55-6	---	---	---	---
1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---
1,1,2-Trichloroethane	79-00-5	---	---	---	---
1,1-Dichloroethane	75-34-3	---	---	---	---
1,1-Dichloroethene	75-35-4	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	---	---	---	---
1,2-Dibromoethane	106-93-4	---	---	---	---
1,2-Dichloroethane	107-06-2	---	---	---	---
1,2-Dichloropropane	78-87-5	---	---	---	---
1,4-Dichlorobenzene	106-46-7	---	---	---	---
4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---
Acetaldehyde	75070	---	---	---	---
1,3-Butadiene	106990	---	---	---	---
Arsenic	7440-38-2	---	---	---	---
Benzene	71-43-2	---	---	---	---
Benzyl chloride	100-44-7	---	---	---	---
Bromoform	75-25-2	---	---	---	---
Bromomethane	74-83-9	---	---	---	---
Beryllium	7440-41-7	---	---	---	---
Cadmium	7440-43-9	---	---	---	---
Carbon disulfide	75-15-0	---	---	---	---
Carbon tetrachloride	56-23-5	---	---	---	---
Chromium	7440-47-3	---	---	---	---
Chlorobenzene	108-90-7	---	---	---	---
Chloroethane	75-00-3	---	---	---	---
Chloroform	67-66-3	---	---	---	---
Chloromethane	74-87-2	---	---	---	---
Cobalt	7440-48-4	---	---	---	---
Dichlorobenzene	25321-22-6	---	---	---	---
Ethyl Benzene	100-41-4	---	---	---	---
Formaldehyde	50-00-0	---	---	---	---
Hexachlorobutadiene	87-68-3	---	---	---	---
Hexane	110-54-3	---	---	---	---
Manganese	7439-96-5	---	---	---	---
Mercury	7439-97-6	---	---	---	---
Methylene Chloride	75-09-02	---	---	---	---
Methyl-tert-butyl ether	1634-04-4	---	---	---	---
Naphthalene	91-20-3	---	---	---	---
Nickel	7440-02-0	---	---	---	---
PAH (not including Napthalene)		---	---	---	---
POM		---	---	---	---
Propylene	115-07-1	---	---	---	---
Selenium	7782-49-2	---	---	---	---
Styrene	100-42-5	---	---	---	---
Tetrachloroethene	127-18-4	---	---	---	---
Toluene	108-88-3	---	---	---	---
Trichloroethene	79-01-6	---	---	---	---
Vinyl Acetate	108-05-4	---	---	---	---
Vinyl Chloride	75-01-4	---	---	---	---
Xylenes	1330-20-7	---	---	---	---
Total HAPs	NA	---	---	---	---

3a) Delta ID No.:					
3b) Tempo SI ID No.:		EQUI117			
Description		Battery Terminal Post Coater 31			
3c) Pollutant Name	**3d)** CAS #	**3e)** Potential Lbs per Hr	Unc tpy	Limited tpy	**3f)** Actual tpy
PM	NA	0.01	0.07	0.07	---
PM10	NA	0.01	0.07	0.07	---
PM2.5	NA	0.01	0.07	0.07	---
SO2	NA	---	---	---	---
NOx	NA	---	---	---	---
CO	NA	---	---	---	---
VOC	NA	0.03	0.12	---	---
Lead	NA	---	---	---	---
CO2	NA	---	---	---	---
CH4	NA	---	---	---	---
N2O	NA	---	---	---	---
Total GHG (CO2e)	NA	---	---	---	---
1,1,1-Trichloroethane	71-55-6	---	---	---	---
1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---
1,1,2-Trichloroethane	79-00-5	---	---	---	---
1,1-Dichloroethane	75-34-3	---	---	---	---
1,1-Dichloroethene	75-35-4	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	---	---	---	---
1,2-Dibromoethane	106-93-4	---	---	---	---
1,2-Dichloroethane	107-06-2	---	---	---	---
1,2-Dichloropropane	78-87-5	---	---	---	---
1,4-Dichlorobenzene	106-46-7	---	---	---	---
4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---
Acetaldehyde	75070	---	---	---	---
1,3-Butadiene	106990	---	---	---	---
Arsenic	7440-38-2	---	---	---	---
Benzene	71-43-2	---	---	---	---
Benzyl chloride	100-44-7	---	---	---	---
Bromoform	75-25-2	---	---	---	---
Bromomethane	74-83-9	---	---	---	---
Beryllium	7440-41-7	---	---	---	---
Cadmium	7440-43-9	---	---	---	---
Carbon disulfide	75-15-0	---	---	---	---
Carbon tetrachloride	56-23-5	---	---	---	---
Chromium	7440-47-3	---	---	---	---
Chlorobenzene	108-90-7	---	---	---	---
Chloroethane	75-00-3	---	---	---	---
Chloroform	67-66-3	---	---	---	---
Chloromethane	74-87-2	---	---	---	---
Cobalt	7440-48-4	---	---	---	---
Dichlorobenzene	25321-22-6	---	---	---	---
Ethyl Benzene	100-41-4	---	---	---	---
Formaldehyde	50-00-0	---	---	---	---
Hexachlorobutadiene	87-68-3	---	---	---	---
Hexane	110-54-3	---	---	---	---
Manganese	7439-96-5	---	---	---	---
Mercury	7439-97-6	---	---	---	---
Methylene Chloride	75-09-02	---	---	---	---
Methyl-tert-butyl ether	1634-04-4	---	---	---	---
Naphthalene	91-20-3	---	---	---	---
Nickel	7440-02-0	---	---	---	---
PAH (not including Napthalene)		---	---	---	---
POM		---	---	---	---
Propylene	115-07-1	---	---	---	---
Selenium	7782-49-2	---	---	---	---
Styrene	100-42-5	---	---	---	---
Tetrachloroethene	127-18-4	---	---	---	---
Toluene	108-88-3	---	---	---	---
Trichloroethene	79-01-6	---	---	---	---
Vinyl Acetate	108-05-4	---	---	---	---
Vinyl Chloride	75-01-4	---	---	---	---
Xylenes	1330-20-7	---	---	---	---
Total HAPs	NA	---	---	---	---

3a) Delta ID No.:					
3b) Tempo SI ID No.:		EQUI240			
Description		Prototype Coater			
3c) Pollutant Name	**3d)** CAS #	**3e)** Potential Lbs per Hr	Unc tpy	Limited tpy	**3f)** Actual tpy
PM	NA	6.34E-03	0.03	0.03	---
PM10	NA	6.34E-03	0.03	0.03	---
PM2.5	NA	6.34E-03	0.03	0.03	---
SO2	NA	---	---	---	---
NOx	NA	---	---	---	---
CO	NA	---	---	---	---
VOC	NA	0.01	0.05	0.05	---
Lead	NA	---	---	---	---
CO2	NA	---	---	---	---
CH4	NA	---	---	---	---
N2O	NA	---	---	---	---
Total GHG (CO2e)	NA	---	---	---	---
1,1,1-Trichloroethane	71-55-6	---	---	---	---
1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---
1,1,2-Trichloroethane	79-00-5	---	---	---	---
1,1-Dichloroethane	75-34-3	---	---	---	---
1,1-Dichloroethene	75-35-4	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	---	---	---	---
1,2-Dibromoethane	106-93-4	---	---	---	---
1,2-Dichloroethane	107-06-2	---	---	---	---
1,2-Dichloropropane	78-87-5	---	---	---	---
1,4-Dichlorobenzene	106-46-7	---	---	---	---
4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---
Acetaldehyde	75070	---	---	---	---
1,3-Butadiene	106990	---	---	---	---
Arsenic	7440-38-2	---	---	---	---
Benzene	71-43-2	---	---	---	---
Benzyl chloride	100-44-7	---	---	---	---
Bromoform	75-25-2	---	---	---	---
Bromomethane	74-83-9	---	---	---	---
Beryllium	7440-41-7	---	---	---	---
Cadmium	7440-43-9	---	---	---	---
Carbon disulfide	75-15-0	---	---	---	---
Carbon tetrachloride	56-23-5	---	---	---	---
Chromium	7440-47-3	---	---	---	---
Chlorobenzene	108-90-7	---	---	---	---
Chloroethane	75-00-3	---	---	---	---
Chloroform	67-66-3	---	---	---	---
Chloromethane	74-87-2	---	---	---	---
Cobalt	7440-48-4	---	---	---	---
Dichlorobenzene	25321-22-6	---	---	---	---
Ethyl Benzene	100-41-4	---	---	---	---
Formaldehyde	50-00-0	---	---	---	---
Hexachlorobutadiene	87-68-3	---	---	---	---
Hexane	110-54-3	---	---	---	---
Manganese	7439-96-5	---	---	---	---
Mercury	7439-97-6	---	---	---	---
Methylene Chloride	75-09-02	---	---	---	---
Methyl-tert-butyl ether	1634-04-4	---	---	---	---
Naphthalene	91-20-3	---	---	---	---
Nickel	7440-02-0	---	---	---	---
PAH (not including Napthalene)		---	---	---	---
POM		---	---	---	---
Propylene	115-07-1	---	---	---	---
Selenium	7782-49-2	---	---	---	---
Styrene	100-42-5	---	---	---	---
Tetrachloroethene	127-18-4	---	---	---	---
Toluene	108-88-3	---	---	---	---
Trichloroethene	79-01-6	---	---	---	---
Vinyl Acetate	108-05-4	---	---	---	---
Vinyl Chloride	75-01-4	---	---	---	---
Xylenes	1330-20-7	---	---	---	---
Total HAPs	NA	---	---	---	---

3a) Delta ID No.:					
3b) Tempo SI ID No.:		EQUI219			
Description		Battery Terminal Post Coater 33			
3c) Pollutant Name	**3d)** CAS #	**3e)** Potential Lbs per Hr	Unc tpy	Limited tpy	**3f)** Actual tpy
PM	NA	1.48E-04	0.07	6.50E-04	---
PM10	NA	1.48E-04	0.07	6.50E-04	---
PM2.5	NA	1.48E-04	0.07	6.50E-04	---
SO2	NA	---	---	---	---
NOx	NA	---	---	---	---
CO	NA	---	---	---	---
VOC	NA	0.03	0.12	---	---
Lead	NA	---	---	---	---
CO2	NA	---	---	---	---
CH4	NA	---	---	---	---
N2O	NA	---	---	---	---
Total GHG (CO2e)	NA	---	---	---	---
1,1,1-Trichloroethane	71-55-6	---	---	---	---
1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---
1,1,2-Trichloroethane	79-00-5	---	---	---	---
1,1-Dichloroethane	75-34-3	---	---	---	---
1,1-Dichloroethene	75-35-4	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	---	---	---	---
1,2-Dibromoethane	106-93-4	---	---	---	---
1,2-Dichloroethane	107-06-2	---	---	---	---
1,2-Dichloropropane	78-87-5	---	---	---	---
1,4-Dichlorobenzene	106-46-7	---	---	---	---
4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---
Acetaldehyde	75070	---	---	---	---
1,3-Butadiene	106990	---	---	---	---
Arsenic	7440-38-2	---	---	---	---
Benzene	71-43-2	---	---	---	---
Benzyl chloride	100-44-7	---	---	---	---
Bromoform	75-25-2	---	---	---	---
Bromomethane	74-83-9	---	---	---	---
Beryllium	7440-41-7	---	---	---	---
Cadmium	7440-43-9	---	---	---	---
Carbon disulfide	75-15-0	---	---	---	---
Carbon tetrachloride	56-23-5	---	---	---	---
Chromium	7440-47-3	---	---	---	---
Chlorobenzene	108-90-7	---	---	---	---
Chloroethane	75-00-3	---	---	---	---
Chloroform	67-66-3	---	---	---	---
Chloromethane	74-87-2	---	---	---	---
Cobalt	7440-48-4	---	---	---	---
Dichlorobenzene	25321-22-6	---	---	---	---
Ethyl Benzene	100-41-4	---	---	---	---
Formaldehyde	50-00-0	---	---	---	---
Hexachlorobutadiene	87-68-3	---	---	---	---
Hexane	110-54-3	---	---	---	---
Manganese	7439-96-5	---	---	---	---
Mercury	7439-97-6	---	---	---	---
Methylene Chloride	75-09-02	---	---	---	---
Methyl-tert-butyl ether	1634-04-4	---	---	---	---
Naphthalene	91-20-3	---	---	---	---
Nickel	7440-02-0	---	---	---	---
PAH (not including Napthalene)		---	---	---	---
POM		---	---	---	---
Propylene	115-07-1	---	---	---	---
Selenium	7782-49-2	---	---	---	---
Styrene	100-42-5	---	---	---	---
Tetrachloroethene	127-18-4	---	---	---	---
Toluene	108-88-3	---	---	---	---
Trichloroethene	79-01-6	---	---	---	---
Vinyl Acetate	108-05-4	---	---	---	---
Vinyl Chloride	75-01-4	---	---	---	---
Xylenes	1330-20-7	---	---	---	---
Total HAPs	NA	---	---	---	---

3a) Delta ID No.:					
3b) Tempo SI ID No.:		EQUI220			
Description		Battery Terminal Post Coater 34			
3c) Pollutant Name	**3d)** CAS #	**3e)** Potential Lbs per Hr	Unc tpy	Limited tpy	**3f)** Actual tpy
PM	NA	1.48E-04	0.07	6.50E-04	---
PM10	NA	1.48E-04	0.07	6.50E-04	---
PM2.5	NA	1.48E-04	0.07	6.50E-04	---
SO2	NA	---	---	---	---
NOx	NA	---	---	---	---
CO	NA	---	---	---	---
VOC	NA	0.03	0.12	---	---
Lead	NA	---	---	---	---
CO2	NA	---	---	---	---
CH4	NA	---	---	---	---
N2O	NA	---	---	---	---
Total GHG (CO2e)	NA	---	---	---	---
1,1,1-Trichloroethane	71-55-6	---	---	---	---
1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---
1,1,2-Trichloroethane	79-00-5	---	---	---	---
1,1-Dichloroethane	75-34-3	---	---	---	---
1,1-Dichloroethene	75-35-4	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	---	---	---	---
1,2-Dibromoethane	106-93-4	---	---	---	---
1,2-Dichloroethane	107-06-2	---	---	---	---
1,2-Dichloropropane	78-87-5	---	---	---	---
1,4-Dichlorobenzene	106-46-7	---	---	---	---
4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---
Acetaldehyde	75070	---	---	---	---
1,3-Butadiene	106990	---	---	---	---
Arsenic	7440-38-2	---	---	---	---
Benzene	71-43-2	---	---	---	---
Benzyl chloride	100-44-7	---	---	---	---
Bromoform	75-25-2	---	---	---	---
Bromomethane	74-83-9	---	---	---	---
Beryllium	7440-41-7	---	---	---	---
Cadmium	7440-43-9	---	---	---	---
Carbon disulfide	75-15-0	---	---	---	---
Carbon tetrachloride	56-23-5	---	---	---	---
Chromium	7440-47-3	---	---	---	---
Chlorobenzene	108-90-7	---	---	---	---
Chloroethane	75-00-3	---	---	---	---
Chloroform	67-66-3	---	---	---	---
Chloromethane	74-87-2	---	---	---	---
Cobalt	7440-48-4	---	---	---	---
Dichlorobenzene	25321-22-6	---	---	---	---
Ethyl Benzene	100-41-4	---	---	---	---
Formaldehyde	50-00-0	---	---	---	---
Hexachlorobutadiene	87-68-3	---	---	---	---
Hexane	110-54-3	---	---	---	---
Manganese	7439-96-5	---	---	---	---
Mercury	7439-97-6	---	---	---	---
Methylene Chloride	75-09-02	---	---	---	---
Methyl-tert-butyl ether	1634-04-4	---	---	---	---
Naphthalene	91-20-3	---	---	---	---
Nickel	7440-02-0	---	---	---	---
PAH (not including Napthalene)		---	---	---	---
POM		---	---	---	---
Propylene	115-07-1	---	---	---	---
Selenium	7782-49-2	---	---	---	---
Styrene	100-42-5	---	---	---	---
Tetrachloroethene	127-18-4	---	---	---	---
Toluene	108-88-3	---	---	---	---
Trichloroethene	79-01-6	---	---	---	---
Vinyl Acetate	108-05-4	---	---	---	---
Vinyl Chloride	75-01-4	---	---	---	---
Xylenes	1330-20-7	---	---	---	---
Total HAPs	NA	---	---	---	---

3a) Delta ID No.:			
3b) Tempo SI ID No.:		TBD	
Description		Future UV Coaters	
3c) Pollutant Name	**3d)** CAS #	**3e)** Potential Lbs per Hr	Unc tpy
PM	NA	1.34E-03	0.59
PM10	NA	1.34E-03	0.59
PM2.5	NA	1.34E-03	0.59
SO2	NA	---	---
NOx	NA	---	---
CO	NA	---	---
VOC	NA	0.25	1.07
Lead	NA	---	---
CO2	NA	---	---
CH4	NA	---	---
N2O	NA	---	---
Total GHG (CO2e)	NA	---	---
1,1,1-Trichloroethane	71-55-6	---	---
1,1,2,2-Tetrachloroethane	79-34-5	---	---
1,1,2-Trichloroethane	79-00-5	---	---
1,1-Dichloroethane	75-34-3	---	---
1,1-Dichloroethene	75-35-4	---	---
1,2,4-Trichlorobenzene	120-82-1	---	---
1,2-Dibromoethane	106-93-4	---	---
1,2-Dichloroethane	107-06-2	---	---
1,2-Dichloropropane	78-87-5	---	---
1,4-Dichlorobenzene	106-46-7	---	---
4-Methyl-2-pentanone(MIBK)	108-10-1	---	---
Acetaldehyde	75070	---	---
1,3-Butadiene	106990	---	---
Arsenic	7440-38-2	---	---
Benzene	71-43-2	---	---
Benzyl chloride	100-44-7	---	---
Bromoform	75-25-2	---	---
Bromomethane	74-83-9	---	---
Beryllium	7440-41-7	---	---
Cadmium	7440-43-9	---	---
Carbon disulfide	75-15-0	---	---
Carbon tetrachloride	56-23-5	---	---
Chromium	7440-47-3	---	---
Chlorobenzene	108-90-7	---	---
Chloroethane	75-00-3	---	---
Chloroform	67-66-3	---	---
Chloromethane	74-87-2	---	---
Cobalt	7440-48-4	---	---
Dichlorobenzene	25321-22-6	---	---
Ethyl Benzene	100-41-4	---	---
Formaldehyde	50-00-0	---	---
Hexachlorobutadiene	87-68-3	---	---
Hexane	110-54-3	---	---
Manganese	7439-96-5	---	---
Mercury	7439-97-6	---	---
Methylene Chloride	75-09-02	---	---
Methyl-tert-butyl ether	1634-04-4	---	---
Naphthalene	91-20-3	---	---
Nickel	7440-02-0	---	---
PAH (not including Napthalene)		---	---
POM		---	---
Propylene	115-07-1	---	---
Selenium	7782-49-2	---	---
Styrene	100-42-5	---	---
Tetrachloroethene	127-18-4	---	---
Toluene	108-88-3	---	---
Trichloroethene	79-01-6	---	---
Vinyl Acetate	108-05-4	---	---
Vinyl Chloride	75-01-4	---	---
Xylenes	1330-20-7	---	---
Total HAPs	NA	---	---

Alternate Format

GI-07 Spreadsheet

Facility Emmison Summary
Air Quality Permit Program
Doc Type: Permit Application

		3a) Delta ID No.:							3a) Delta ID No.:							3a) Delta ID No.:						
		3b) Tempo S/ ID No.:			KQU172				3b) Tempo S/ ID No.:			KQU166				3b) Tempo S/ ID No.:			COM01			
		Description			Soaker				Description			Bulk Tank				Description			Coaters Group			
	3f)	3c)	3d)	3e) Potential			3f)		3c)	3d)	3e) Potential			3f)		3c)	3d)	3e) Potential			3f)	
Limited tpy	Actual tpy	Pollutant Name	CAS #	Lbs per hr	Unc tpy	Limited tpy	Actual tpy		Pollutant Name	CAS #	Lbs per hr	Unc tpy	Limited tpy	Actual tpy		Pollutant Name	CAS #	Lbs per hr	Unc tpy	Limited tpy	Actual tpy	
5.65E-03	---	PM	NA	---	---	---	---		PM	NA	---	---	---	---		PM	NA	---	---	---	---	
5.65E-03	---	PM10	NA	---	---	---	---		PM10	NA	---	---	---	---		PM10	NA	---	---	---	---	
5.65E-03	---	PM2.5	NA	---	---	---	---		PM2.5	NA	---	---	---	---		PM2.5	NA	---	---	---	---	
---	---	SO2	NA	---	---	---	---		SO2	NA	---	---	---	---		SO2	NA	---	---	---	---	
---	---	NOx	NA	---	---	---	---		NOx	NA	---	---	---	---		NOx	NA	---	---	---	---	
---	---	CO	NA	---	---	---	---		CO	NA	---	---	---	---		CO	NA	---	---	---	---	
---	---	VOC	NA	4.73	20.72	---	---		VOC	NA	4.65	18.95	---	---		VOC	NA	---	---	90.00	---	
---	---	Lead	NA	---	---	---	---		Lead	NA	---	---	---	---		Lead	NA	---	---	---	---	
---	---	CO2	NA	---	---	---	---		CO2	NA	---	---	---	---		CO2	NA	---	---	---	---	
---	---	CH4	NA	---	---	---	---		CH4	NA	---	---	---	---		CH4	NA	---	---	---	---	
---	---	N2O	NA	---	---	---	---		N2O	NA	---	---	---	---		N2O	NA	---	---	---	---	
---	---	Total GHG (CO2e)	NA	---	---	---	---		Total GHG (CO2e)	NA	---	---	---	---		Total GHG (CO2e)	NA	---	---	---	---	
---	---	1,1,1-Trichloroethane	71-55-6	---	---	---	---		1,1,1-Trichloroethane	71-55-6	---	---	---	---		1,1,1-Trichloroethane	71-55-6	---	---	---	---	
---	---	1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---		1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---		1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---	
---	---	1,1,2-Trichloroethane	79-00-5	---	---	---	---		1,1,2-Trichloroethane	79-00-5	---	---	---	---		1,1,2-Trichloroethane	79-00-5	---	---	---	---	
---	---	1,1-Dichloroethane	75-34-3	---	---	---	---		1,1-Dichloroethane	75-34-3	---	---	---	---		1,1-Dichloroethane	75-34-3	---	---	---	---	
---	---	1,1-Dichloroethene	75-35-4	---	---	---	---		1,1-Dichloroethene	75-35-4	---	---	---	---		1,1-Dichloroethene	75-35-4	---	---	---	---	
---	---	1,2,4-Trichlorobenzene	120-82-1	---	---	---	---		1,2,4-Trichlorobenzene	120-82-1	---	---	---	---		1,2,4-Trichlorobenzene	120-82-1	---	---	---	---	
---	---	1,2-Dibromoethane	106-93-4	---	---	---	---		1,2-Dibromoethane	106-93-4	---	---	---	---		1,2-Dibromoethane	106-93-4	---	---	---	---	
---	---	1,2-Dichloroethane	107-06-2	---	---	---	---		1,2-Dichloroethane	107-06-2	---	---	---	---		1,2-Dichloroethane	107-06-2	---	---	---	---	
---	---	1,2-Dichloropropane	78-87-5	---	---	---	---		1,2-Dichloropropane	78-87-5	---	---	---	---		1,2-Dichloropropane	78-87-5	---	---	---	---	
---	---	1,4-Dichlorobenzene	106-46-7	---	---	---	---		1,4-Dichlorobenzene	106-46-7	---	---	---	---		1,4-Dichlorobenzene	106-46-7	---	---	---	---	
---	---	4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---		4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---		4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---	
---	---	Acetaldehyde	75070	---	---	---	---		Acetaldehyde	75070	---	---	---	---		Acetaldehyde	75070	---	---	---	---	
---	---	1,3-Butadiene	106990	---	---	---	---		1,3-Butadiene	106990	---	---	---	---		1,3-Butadiene	106990	---	---	---	---	
---	---	Arsenic	7440-38-2	---	---	---	---		Arsenic	7440-38-2	---	---	---	---		Arsenic	7440-38-2	---	---	---	---	
---	---	Benzene	71-43-2	---	---	---	---		Benzene	71-43-2	---	---	---	---		Benzene	71-43-2	---	---	---	---	
---	---	Benzyl chloride	100-44-7	---	---	---	---		Benzyl chloride	100-44-7	---	---	---	---		Benzyl chloride	100-44-7	---	---	---	---	
---	---	Biomedium	75-25-2	---	---	---	---		Biomedium	75-25-2	---	---	---	---		Biomedium	75-25-2	---	---	---	---	
---	---	Biomonomethane	74-83-9	---	---	---	---		Biomonomethane	74-83-9	---	---	---	---		Biomonomethane	74-83-9	---	---	---	---	
---	---	Beryllium	7440-41-7	---	---	---	---		Beryllium	7440-41-7	---	---	---	---		Beryllium	7440-41-7	---	---	---	---	
---	---	Cadmium	7440-43-9	---	---	---	---		Cadmium	7440-43-9	---	---	---	---		Cadmium	7440-43-9	---	---	---	---	
---	---	Carbon disulfide	75-15-0	---	---	---	---		Carbon disulfide	75-15-0	---	---	---	---		Carbon disulfide	75-15-0	---	---	---	---	
---	---	Carbon tetrachloride	56-23-5	---	---	---	---		Carbon tetrachloride	56-23-5	---	---	---	---		Carbon tetrachloride	56-23-5	---	---	---	---	
---	---	Chromium	7440-47-3	---	---	---	---		Chromium	7440-47-3	---	---	---	---		Chromium	7440-47-3	---	---	---	---	
---	---	Chlorobenzene	108-90-7	---	---	---	---		Chlorobenzene	108-90-7	---	---	---	---		Chlorobenzene	108-90-7	---	---	---	---	
---	---	Chloroethane	75-00-3	---	---	---	---		Chloroethane	75-00-3	---	---	---	---		Chloroethane	75-00-3	---	---	---	---	
---	---	Chloroform	67-66-3	---	---	---	---		Chloroform	67-66-3	---	---	---	---		Chloroform	67-66-3	---	---	---	---	
---	---	Chloromethane	74-87-3	---	---	---	---		Chloromethane	74-87-3	---	---	---	---		Chloromethane	74-87-3	---	---	---	---	
---	---	Cobalt	7440-48-4	---	---	---	---		Cobalt	7440-48-4	---	---	---	---		Cobalt	7440-48-4	---	---	---	---	
---	---	Dichlorobenzene	25321-22-6	---	---	---	---		Dichlorobenzene	25321-22-6	---	---	---	---		Dichlorobenzene	25321-22-6	---	---	---	---	
---	---	Ethyl Benzene	100-41-4	---	---	---	---		Ethyl Benzene	100-41-4	---	---	---	---		Ethyl Benzene	100-41-4	---	---	---	---	
---	---	Formaldehyde	50-00-0	---	---	---	---		Formaldehyde	50-00-0	---	---	---	---		Formaldehyde	50-00-0	---	---	---	---	
---	---	Hexachlorobutadiene	87-68-3	---	---	---	---		Hexachlorobutadiene	87-68-3	---	---	---	---		Hexachlorobutadiene	87-68-3	---	---	---	---	
---	---	Hexane	110-54-3	---	---	---	---		Hexane	110-54-3	---	---	---	---		Hexane	110-54-3	---	---	---	---	
---	---	Manganese	7439-96-5	---	---	---	---		Manganese	7439-96-5	---	---	---	---		Manganese	7439-96-5	---	---	---	---	
---	---	Mercury	7439-97-6	---	---	---	---		Mercury	7439-97-6	---	---	---	---		Mercury	7439-97-6	---	---	---	---	
---	---	Methylene Chloride	75-09-02	---	---	---	---		Methylene Chloride	75-09-02	---	---	---	---		Methylene Chloride	75-09-02	---	---	---	---	
---	---	Methyl tert-butyl ether	1634-04-4	---	---	---	---		Methyl tert-butyl ether	1634-04-4	---	---	---	---		Methyl tert-butyl ether	1634-04-4	---	---	---	---	
---	---	Naphthalene	91-20-3	---	---	---	---		Naphthalene	91-20-3	---	---	---	---		Naphthalene	91-20-3	---	---	---	---	
---	---	Nickel	7440-02-0	---	---	---	---		Nickel	7440-02-0	---	---	---	---		Nickel	7440-02-0	---	---	---	---	
---	---	PAH (not including Naphthalene)		---	---	---	---		PAH (not including Naphthalene)		---	---	---	---		PAH (not including Naphthalene)		---	---	---	---	
---	---	POM		---	---	---	---		POM		---	---	---	---		POM		---	---	---	---	
---	---	Propylene	115-07-1	---	---	---	---		Propylene	115-07-1	---	---	---	---		Propylene	115-07-1	---	---	---	---	
---	---	Selenium	7782-49-2	---	---	---	---		Selenium	7782-49-2	---	---	---	---		Selenium	7782-49-2	---	---	---	---	
---	---	Styrene	100-42-5	---	---	---	---		Styrene	100-42-5	---	---	---	---		Styrene	100-42-5	---	---	---	---	
---	---	Tetrachloroethene	127-18-4	---	---	---	---		Tetrachloroethene	127-18-4	---	---	---	---		Tetrachloroethene	127-18-4	---	---	---	---	
---	---	Toluene	108-88-3	---	---	---	---		Toluene	108-88-3	---	---	---	---		Toluene	108-88-3	---	---	---	---	
---	---	Trichloroethene	79-01-6	---	---	---	---		Trichloroethene	79-01-6	---	---	---	---		Trichloroethene	79-01-6	---	---	---	---	
---	---	Vinyl Acetate	108-05-4	---	---	---	---		Vinyl Acetate	108-05-4	---	---	---	---		Vinyl Acetate	108-05-4	---	---	---	---	
---	---	Vinyl Chloride	75-01-4	---	---	---	---		Vinyl Chloride	75-01-4	---	---	---	---		Vinyl Chloride	75-01-4	---	---	---	---	
---	---	Xylenes	1330-20-7	---	---	---	---		Xylenes	1330-20-7	---	---	---	---		Xylenes	1330-20-7	---	---	---	---	
---	---	Total HAPs	NA	---	---	---	---		Total HAPs	NA	---	---	---	---		Total HAPs	NA	---	---	---	---	

trans-1,2-Dichloroethylene	32.6

Alternate Format

GI-07 Spreadsheet

Facility Emmison Summary

Air Quality Permit Program

Doc Type: Permit Application

3a) Delta ID No.:						3a) Delta ID No.:						3a) Delta ID No.:						3a) Delta ID No.:						3a) Delta ID No.:						3a) Delta ID No.:					
3b) Tempo S/ ID No.:		EQU120				3b) Tempo S/ ID No.:		EQU156				3b) Tempo S/ ID No.:		EQU157				3b) Tempo S/ ID No.:		EQU158				3b) Tempo S/ ID No.:		EQU159				3b) Tempo S/ ID No.:		EQU160			
Description		Emergency Generator				Description		MAU 1N				Description		MAU 2N				Description		MAU 3N				Description		MAU 5N				Description		MAU 6N			
3c)	3d)	3e) Potential:			3f)	3c)	3d)	3e) Potential:			3f)	3c)	3d)	3e) Potential:			3f)	3c)	3d)	3e) Potential:			3f)	3c)	3d)	3e) Potential:			3f)	3c)	3d)	3e) Potential:			3f)
Pollutant Name	CAS #	Lbs per Hr	Unc try	Limited try	Actual try	Pollutant Name	CAS #	Lbs per Hr	Unc try	Limited try	Actual try	Pollutant Name	CAS #	Lbs per Hr	Unc try	Limited try	Actual try	Pollutant Name	CAS #	Lbs per Hr	Unc try	Limited try	Actual try	Pollutant Name	CAS #	Lbs per Hr	Unc try	Limited try	Actual try	Pollutant Name	CAS #	Lbs per Hr	Unc try	Limited try	Actual try
PM	NA	0.19	0.04	0.04	—	PM	NA	0.02	0.09	0.09	—	PM	NA	0.05	0.20	0.20	—	PM	NA	0.04	0.18	0.18	—	PM	NA	0.04	0.16	0.16	—	PM	NA	0.04	0.18	0.18	—
PM10	NA	0.19	0.04	0.04	—	PM10	NA	0.02	0.09	0.09	—	PM10	NA	0.05	0.20	0.20	—	PM10	NA	0.04	0.18	0.18	—	PM10	NA	0.04	0.16	0.16	—	PM10	NA	0.04	0.18	0.18	—
PM2.5	NA	0.19	0.04	0.04	—	PM2.5	NA	0.02	0.09	0.09	—	PM2.5	NA	0.05	0.20	0.20	—	PM2.5	NA	0.04	0.18	0.18	—	PM2.5	NA	0.04	0.16	0.16	—	PM2.5	NA	0.04	0.18	0.18	—
SO2	NA	0.16	0.04	0.04	—	SO2	NA	1.47E-03	6.44E-03	6.44E-03	—	SO2	NA	3.56E-03	0.02	0.02	—	SO2	NA	3.05E-03	0.01	0.01	—	SO2	NA	2.91E-03	0.01	0.01	—	SO2	NA	3.18E-03	0.01	0.01	—
NOx	NA	2.49	0.62	0.62	—	NOx	NA	0.25	1.07	1.07	—	NOx	NA	0.59	2.60	2.60	—	NOx	NA	0.55	2.41	2.41	—	NOx	NA	0.49	2.13	2.13	—	NOx	NA	0.53	2.32	2.32	—
CO	NA	0.53	0.13	0.13	—	CO	NA	0.21	0.90	0.90	—	CO	NA	0.50	2.18	2.18	—	CO	NA	0.46	2.02	2.02	—	CO	NA	0.41	1.79	1.79	—	CO	NA	0.44	1.95	1.95	—
VOC	NA	0.30	0.05	0.05	—	VOC	NA	0.01	0.06	0.06	—	VOC	NA	0.03	0.14	0.14	—	VOC	NA	0.03	0.13	0.13	—	VOC	NA	0.03	0.12	0.12	—	VOC	NA	0.03	0.13	0.13	—
Lead	NA	NA	NA	NA	—	Lead	NA	NA	NA	NA	—	Lead	NA	NA	NA	NA	—	Lead	NA	NA	NA	NA	—	Lead	NA	NA	NA	NA	—	Lead	NA	NA	NA	NA	—
CO2	NA	80.66	23.76	23.76	—	CO2	NA	292.44	1280.92	1280.92	—	CO2	NA	707.71	3099.78	3099.78	—	CO2	NA	658.09	2873.67	2873.67	—	CO2	NA	579.09	2538.18	2538.18	—	CO2	NA	631.68	2768.74	2768.74	—
CH4	NA	3.66E-03	6.60E-04	6.60E-04	—	CH4	NA	5.50E-03	0.02	0.02	—	CH4	NA	0.01	0.04	0.04	—	CH4	NA	0.01	0.03	0.03	—	CH4	NA	0.01	0.03	0.03	—	CH4	NA	0.01	0.03	0.03	—
N2O	NA	7.71E-04	1.93E-04	1.93E-04	—	N2O	NA	5.53E-04	2.41E-03	2.41E-03	—	N2O	NA	1.33E-03	5.83E-03	5.83E-03	—	N2O	NA	1.23E-03	5.41E-03	5.41E-03	—	N2O	NA	1.09E-03	4.77E-03	4.77E-03	—	N2O	NA	1.19E-03	5.21E-03	5.21E-03	—
Total GHG (CO2e)	NA	95	24	24	—	Total GHG (CO2e)	NA	293	1282	1282	—	Total GHG (CO2e)	NA	708	3103	3103	—	Total GHG (CO2e)	NA	657	2877	2877	—	Total GHG (CO2e)	NA	580	2539	2539	—	Total GHG (CO2e)	NA	632	2770	2770	—
1,1,1-Trichloroethane	71-55-6	—	—	—	—	1,1,1-Trichloroethane	71-55-6	—	—	—	—	1,1,1-Trichloroethane	71-55-6	—	—	—	—	1,1,1-Trichloroethane	71-55-6	—	—	—	—	1,1,1-Trichloroethane	71-55-6	—	—	—	—	1,1,1-Trichloroethane	71-55-6	—	—	—	—
1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—	1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—	1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—	1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—	1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—	1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—
1,1,2-Trichloroethane	79-00-5	—	—	—	—	1,1,2-Trichloroethane	79-00-5	—	—	—	—	1,1,2-Trichloroethane	79-00-5	—	—	—	—	1,1,2-Trichloroethane	79-00-5	—	—	—	—	1,1,2-Trichloroethane	79-00-5	—	—	—	—	1,1,2-Trichloroethane	79-00-5	—	—	—	—
1,1-Dichloroethane	79-34-3	—	—	—	—	1,1-Dichloroethane	79-34-3	—	—	—	—	1,1-Dichloroethane	79-34-3	—	—	—	—	1,1-Dichloroethane	79-34-3	—	—	—	—	1,1-Dichloroethane	79-34-3	—	—	—	—	1,1-Dichloroethane	79-34-3	—	—	—	—
1,1-Dichloroethene	75-35-4	—	—	—	—	1,1-Dichloroethene	75-35-4	—	—	—	—	1,1-Dichloroethene	75-35-4	—	—	—	—	1,1-Dichloroethene	75-35-4	—	—	—	—	1,1-Dichloroethene	75-35-4	—	—	—	—	1,1-Dichloroethene	75-35-4	—	—	—	—
1,2,4-Trichlorobenzene	120-82-1	—	—	—	—	1,2,4-Trichlorobenzene	120-82-1	—	—	—	—	1,2,4-Trichlorobenzene	120-82-1	—	—	—	—	1,2,4-Trichlorobenzene	120-82-1	—	—	—	—	1,2,4-Trichlorobenzene	120-82-1	—	—	—	—	1,2,4-Trichlorobenzene	120-82-1	—	—	—	—
1,2-Dibromoethane	106-93-4	—	—	—	—	1,2-Dibromoethane	106-93-4	—	—	—	—	1,2-Dibromoethane	106-93-4	—	—	—	—	1,2-Dibromoethane	106-93-4	—	—	—	—	1,2-Dibromoethane	106-93-4	—	—	—	—	1,2-Dibromoethane	106-93-4	—	—	—	—
1,2-Dichloroethane	107-06-2	—	—	—	—	1,2-Dichloroethane	107-06-2	—	—	—	—	1,2-Dichloroethane	107-06-2	—	—	—	—	1,2-Dichloroethane	107-06-2	—	—	—	—	1,2-Dichloroethane	107-06-2	—	—	—	—	1,2-Dichloroethane	107-06-2	—	—	—	—
1,2-Dichloropropane	78-87-5	—	—	—	—	1,2-Dichloropropane	78-87-5	—	—	—	—	1,2-Dichloropropane	78-87-5	—	—	—	—	1,2-Dichloropropane	78-87-5	—	—	—	—	1,2-Dichloropropane	78-87-5	—	—	—	—	1,2-Dichloropropane	78-87-5	—	—	—	—
1,4-Dichlorobenzene	106-46-7	—	—	—	—	1,4-Dichlorobenzene	106-46-7	—	—	—	—	1,4-Dichlorobenzene	106-46-7	—	—	—	—	1,4-Dichlorobenzene	106-46-7	—	—	—	—	1,4-Dichlorobenzene	106-46-7	—	—	—	—	1,4-Dichlorobenzene	106-46-7	—	—	—	—
4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—	4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—	4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—	4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—	4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—	4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—
Acetaldehyde	75070	4.47E-04	1.12E-04	1.12E-04	—	Acetaldehyde	75070	—	—	—	—	Acetaldehyde	75070	—	—	—	—	Acetaldehyde	75070	—	—	—	—	Acetaldehyde	75070	—	—	—	—	Acetaldehyde	75070	—	—	—	—
1,3-Butadiene	106990	2.28E-05	5.70E-06	5.70E-06	—	1,3-Butadiene	106990	—	—	—	—	1,3-Butadiene	106990	—	—	—	—	1,3-Butadiene	106990	—	—	—	—	1,3-Butadiene	106990	—	—	—	—	1,3-Butadiene	106990	—	—	—	—
Arsenic	7440-38-2	—	—	—	—	Arsenic	7440-38-2	4.90E-07	2.15E-06	2.15E-06	—	Arsenic	7440-38-2	1.19E-06	5.20E-06	5.20E-06	—	Arsenic	7440-38-2	1.10E-06	4.82E-06	4.82E-06	—	Arsenic	7440-38-2	9.71E-07	4.25E-06	4.25E-06	—	Arsenic	7440-38-2	1.06E-06	4.64E-06	4.64E-06	—
Benzene	71-43-2	5.44E-04	1.36E-04	1.36E-04	—	Benzene	71-43-2	5.15E-06	2.25E-05	2.25E-05	—	Benzene	71-43-2	1.25E-05	5.46E-05	5.46E-05	—	Benzene	71-43-2	1.15E-05	5.06E-05	5.06E-05	—	Benzene	71-43-2	1.02E-05	4.46E-05	4.46E-05	—	Benzene	71-43-2	1.11E-05	4.87E-05	4.87E-05	—
Benzyl chloride	100-44-7	—	—	—	—	Benzyl chloride	100-44-7	—	—	—	—	Benzyl chloride	100-44-7	—	—	—	—	Benzyl chloride	100-44-7	—	—	—	—	Benzyl chloride	100-44-7	—	—	—	—	Benzyl chloride	100-44-7	—	—	—	—
Biphenyl	92-52-4	—	—	—	—	Biphenyl	92-52-4	—	—	—	—	Biphenyl	92-52-4	—	—	—	—	Biphenyl	92-52-4	—	—	—	—	Biphenyl	92-52-4	—	—	—	—	Biphenyl	92-52-4	—	—	—	—
Bromoform	75-25-2	—	—	—	—	Bromoform	75-25-2	—	—	—	—	Bromoform	75-25-2	—	—	—	—	Bromoform	75-25-2	—	—	—	—	Bromoform	75-25-2	—	—	—	—	Bromoform	75-25-2	—	—	—	—
Bromomethane	74-83-9	—	—	—	—	Bromomethane	74-83-9	—	—	—	—	Bromomethane	74-83-9	—	—	—	—	Bromomethane	74-83-9	—	—	—	—	Bromomethane	74-83-9	—	—	—	—	Bromomethane	74-83-9	—	—	—	—
Beryllium	7440-41-7	—	—	—	—	Beryllium	7440-41-7	2.64E-08	1.23E-07	1.23E-07	—	Beryllium	7440-41-7	7.12E-08	3.12E-07	3.12E-07	—	Beryllium	7440-41-7	6.60E-08	2.89E-07	2.89E-07	—	Beryllium	7440-41-7	5.82E-08	2.55E-07	2.55E-07	—	Beryllium	7440-41-7	6.35E-08	2.78E-07	2.78E-07	—
Cadmium	7440-43-9	—	—	—	—	Cadmium	7440-43-9	2.70E-08	1.18E-07	1.18E-07	—	Cadmium	7440-43-9	6.52E-08	2.86E-07	2.86E-07	—	Cadmium	7440-43-9	6.05E-08	2.65E-07	2.65E-07	—	Cadmium	7440-43-9	5.34E-08	2.34E-07	2.34E-07	—	Cadmium	7440-43-9	5.82E-08	2.55E-07	2.55E-07	—
Carbon disulfide	75-15-0	—	—	—	—	Carbon disulfide	75-15-0	—	—	—	—	Carbon disulfide	75-15-0	—	—	—	—	Carbon disulfide	75-15-0	—	—	—	—	Carbon disulfide	75-15-0	—	—	—	—	Carbon disulfide	75-15-0	—	—	—	—
Carbon tetrachloride	56-23-5	—	—	—	—	Carbon tetrachloride	56-23-5	—	—	—	—	Carbon tetrachloride	56-23-5	—	—	—	—	Carbon tetrachloride	56-23-5	—	—	—	—	Carbon tetrachloride	56-23-5	—	—	—	—	Carbon tetrachloride	56-23-5	—	—	—	—
Chromium	7440-47-3	—	—	—	—	Chromium	7440-47-3	3.43E-06	1.50E-05	1.50E-05	—	Chromium	7440-47-3	8.30E-06	3.64E-05	3.64E-05	—	Chromium	7440-47-3	7.70E-06	3.37E-05	3.37E-05	—	Chromium	7440-47-3	6.79E-06	2.98E-05	2.98E-05	—	Chromium	7440-47-3	7.41E-06	3.25E-05	3.25E-05	—
Chlorobenzene	108-90-7	—	—	—	—	Chlorobenzene	108-90-7	—	—	—	—	Chlorobenzene	108-90-7	—	—	—	—	Chlorobenzene	108-90-7	—	—	—	—	Chlorobenzene	108-90-7	—	—	—	—	Chlorobenzene	108-90-7	—	—	—	—
Chloroethane	75-00-3	—	—	—	—	Chloroethane	75-00-3	—	—	—	—	Chloroethane	75-00-3	—	—	—	—	Chloroethane	75-00-3	—	—	—	—	Chloroethane	75-00-3	—	—	—	—	Chloroethane	75-00-3	—	—	—	—
Chloroform	67-66-3	—	—	—	—	Chloroform	67-66-3	—	—	—	—	Chloroform	67-66-3	—	—	—	—	Chloroform	67-66-3	—	—	—	—	Chloroform	67-66-3	—	—	—	—	Chloroform	67-66-3	—	—	—	—
Chloromethane	74-87-3	—	—	—	—	Chloromethane	74-87-3	—	—	—	—	Chloromethane	74-87-3	—	—	—	—	Chloromethane	74-87-3	—	—	—	—	Chloromethane	74-87-3	—	—	—	—	Chloromethane	74-87-3	—	—	—	—
Cobalt	7440-48-4	—	—	—	—	Cobalt	7440-48-4	2.05E-07	9.02E-07	9.02E-07	—	Cobalt	7440-48-4	4.96E-07	2.18E-06	2.18E-06	—	Cobalt	7440-48-4	4.60E-07	2.02E-06	2.02E-06	—	Cobalt	7440-48-4	4.06E-07	1.79E-06	1.79E-06	—	Cobalt	7440-48-4	4.43E-07	1.95E-06	1.95E-06	—
Dichlorobenzene	25321-22-6	—	—	—	—	Dichlorobenzene	25321-22-6	2.64E-06	1.29E-05	1.29E-05	—	Dichlorobenzene	25321-22-6	7.12E-06	3.12E-05	3.12E-05	—	Dichlorobenzene	25321-22-6	6.60E-06	2.89E-05	2.89E-05	—	Dichlorobenzene	25321-22-6	5.82E-06	2.55E-05	2.55E-05	—	Dichlorobenzene	25321-22-6	6.35E-06	2.78E-05	2.78E-05	—
Ethyl Benzene	100-41-4	—	—	—	—	Ethyl Benzene	100-41-4	—	—	—	—	Ethyl Benzene	100-41-4	—	—	—	—	Ethyl Benzene	100-41-4	—	—	—	—	Ethyl Benzene	100-41-4	—	—	—	—	Ethyl Benzene	100-41-4	—	—	—	—
Formaldehyde	50-00-0	6.88E-04	1.72E-04	1.72E-04	—	Formaldehyde	50-00-0	1.84E-04	8.05E-04	8.05E-04	—	Formaldehyde	50-00-0	4.45E-04	1.95E-03	1.95E-03	—	Formaldehyde	50-00-0	4.12E-04	1.81E-03	1.81E-03	—	Formaldehyde	50-00-0	3.64E-04	1.59E-03	1.59E-03	—	Formaldehyde	50-00-0	3.97E-04	1.74E-03	1.74E-03	—
Hexachlorobutadiene	87-68-3	—	—	—	—	Hexachlorobutadiene	87-68-3	—	—	—	—	Hexachlorobutadiene	87-68-3	—	—	—	—	Hexachlorobutadiene	87-68-3	—	—	—	—	Hexachlorobutadiene	87-68-3	—	—	—	—	Hexachlorobutadiene	87-68-3	—	—	—	—
Hexane	110-54-3	—	—	—	—	Hexane	110-54-3	4.41E-03	0.02	0.02	—	Hexane	110-54-3	0.01	0.05	0.05	—	Hexane	110-54-3	9.89E-03	0.04	0.04	—	Hexane	110-54-3	8.74E-03	0.04	0.04	—	Hexane	110-54-3	9.53E-03	0.04	0.04	—
Manganese	7439-96-5	—	—	—	—	Manganese	7439-96-5	9.31E-07	4.08E-06	4.08E-06	—	Manganese	7439-96-5	2.25E-06	9.87E-06	9.87E-06	—	Manganese	7439-96-5	2.09E-06	9.15E-06	9.15E-06	—	Manganese	7439-96-5	1.84E-06	8.08E-06	8.08E-06	—	Manganese	7439-96-5	2.01E-06	8.81E-06	8.81E-06	—
Mercury	7439-97-6	—	—	—	—	Mercury	7439-97-6	6.27E-07	2.75E-06	2.75E-06	—	Mercury	7439-97-6	1.52E-06	6.71E-06	6.71E-06	—	Mercury	7439-97-6	1.41E-06	6.21E-06	6.21E-06	—	Mercury	7439-97-6	1.24E-06	5.43E-06	5.43E-06	—	Mercury	7439-97-6	1.35E-06	5.93E-06	5.93E-06	—
Methylene Chloride	75-09-02	—	—	—	—	Methylene Chloride	75-09-02	—	—	—	—	Methylene Chloride	75-09-02	—	—	—	—	Methylene Chloride	75-09-02	—	—	—	—	Methylene Chloride	75-09-02	—	—	—	—	Methylene Chloride	75-09-02	—	—	—	—
Methyl tert-butyl ether	1634-04-4	—	—	—	—	Methyl tert-butyl ether	1634-04-4	—	—	—	—	Methyl tert-butyl ether	1634-04-4	—	—	—	—	Methyl tert-butyl ether	1634-04-4	—	—	—	—	Methyl tert-butyl ether	1634-04-4	—	—	—	—	Methyl tert-butyl ether	1634-04-4	—	—	—	—
Naphthalene	91-20-3	5.06E-05	1.27E-05	1.27E-05	—	Naphthalene	91-20-3	1.51E-06	6.51E-06	6.51E-06	—	Naphthalene	91-20-3	3.62E-06	1.58E-05	1.58E-05	—	Naphthalene	91-20-3	3.23E-06	1.47E-05	1.47E-05	—	Naphthalene	91-20-3	2.96E-06	1.30E-05	1.30E-05	—	Naphthalene	91-20-3	3.23E-06	1.41E-05	1.41E-05	—
Nickel	7440-02-0	—	—	—	—	Nickel	7440-02-0	9.19E-06	2.29E-05	2.29E-05	—	Nickel	7440-02-0	1.29E-05	5.65E-05	5.65E-05	—	Nickel	7440-02-0	1.15E-05	5.05E-05	5.05E-05	—	Nickel	7440-02-0	1.02E-05	4.45E-05	4.45E-05	—	Nickel	7440-02-0	1.11E-05	4.87E-05	4.87E-05	—
PAH (not including Naphthalene)		4.73E-05	1.18E-05	1.18E-05	—	PAH (not including Naphthalene)		—	—	—	—	PAH (not including Naphthalene)		—	—	—	—	PAH (not including Naphthalene)		—	—	—	—	PAH (not including Naphthalene)		—	—	—	—	PAH (not including Naphthalene)		—	—	—	—
POM						POM		2.14E-07	9.47E-07	9.47E-07	—	POM		5.23E-07	2.29E-06	2.29E-06	—	POM		4.85E-07	2.13E-06	2.13E-06	—	POM		4.28E-07	1.87E-06	1.87E-06	—	POM		4.67E-07	2.05E-06	2.05E-06	—
Propylene	115-07-1	1.50E-03	6.76E-04	6.76E-04	—	Propylene	115-07-1	5.89E-08	2.58E-07	2.58E-07	—	Propylene	115-07-1	1.42E-07	6.24E-07	6.24E-07	—	Propylene	115-07-1	1.32E-07	5.78E-07	5.78E-07	—	Propylene	115-07-1	1.16E-07	5.10E-07	5.10E-07	—	Propylene	115-07-1	1.27E-07	5.57E-07	5.57E-07	—
Selenium	7782-49-2	—	—	—	—	Selenium	7782-49-2	—	—	—	—	Selenium	7782-49-2	—	—	—	—	Selenium	7782-49-2	—	—	—	—	Selenium	7782-49-2	—	—	—	—	Selenium	7782-49-2	—	—	—	—
Styrene	100-42-5	—	—	—	—	Styrene	100-42-5	—	—	—	—	Styrene	100-42-5	—	—	—	—	Styrene	100-42-5	—	—	—	—	Styrene	100-42-5	—	—	—	—	Styrene	100-42-5	—	—	—	—
Tetrachloroethene	127-18-4	—	—	—	—	Tetrachloroethene	127-18-4	—	—	—	—	Tetrachloroethene	127-18-4	—	—	—	—	Tetrachloroethene	127-18-4	—	—	—	—	Tetrachloroethene	127-18-4	—	—	—	—	Tetrachloroethene	127-18-4	—	—	—	—
Toluene	108-88-3	2.36E-04	5.90E-05	5.90E-05	—	Toluene	108-88-3	8.23E-06	3.61E-05	3.61E-05	—	Toluene	108-88-3	2.02E-05	8.83E-05	8.83E-05	—	Toluene	108-88-3	1.87E-05	8.19E-05	8.19E-05	—	Toluene	108-88-3	1.65E-05	7.23E-05	7.23E-05	—	Toluene	108-88-3	1.80E-05	7.88E-05	7.88E-05	—
Trichloroethene	79-01-6	—	—	—	—	Trichloroethene	79-01-6	—	—	—	—	Trichloroethene	79-01-6	—	—	—	—	Trichloroethene	79-01-6	—	—	—	—	Trichloroethene	79-01-6	—	—	—	—	Trichloroethene	79-01-6	—	—	—	—
Vinyl Acetate	108-05-4	—	—	—	—	Vinyl Acetate	108-05-4	—	—	—	—	Vinyl Acetate	108-05-4	—	—	—	—	Vinyl Acetate	108-05-4	—	—	—	—	Vinyl Acetate	108-05-4	—	—	—	—	Vinyl Acetate	108-05-4	—	—	—	—
Vinyl Chloride	75-01-4	—	—	—	—	Vinyl Chloride	75-01-4	—	—	—	—	Vinyl Chloride	75-01-4	—	—	—	—	Vinyl Chloride	75-01-4	—	—	—	—	Vinyl Chloride	75-01-4	—	—	—	—	Vinyl Chloride	75-01-4	—	—	—	—
Xylenes	1330-20-7	1.66E-04	4.15E-05	4.15E-05	—	Xylenes	1330-20-7	—	—	—	—	Xylenes	1330-20-7	—	—	—	—	Xylenes	1330-20-7	—	—	—	—	Xylenes	1330-20-7	—	—	—	—	Xylenes	1330-20-7	—	—	—	—
Total HAPs	NA	3.71E-03	9.27E-04	9.27E-04	—	Total HAPs	NA	4.63E-03	0.02	0.02	—	Total HAPs	NA	0.01	0.05	0.05	—	Total HAPs	NA	0.01	0.05	0.05	—	Total HAPs	NA	9.16E-03	0.04	0.04	—	Total HAPs	NA	1.00E-02	0.04	0.04	—

Alternate Format

GI-07 Spreadsheet

Facility Emmison Summary

Air Quality Permit Program

Doc Type: Permit Application

3a) Delta ID No.:					3a) Delta ID No.:					3a) Delta ID No.:					3a) Delta ID No.:					3a) Delta ID No.:					3a) Delta ID No.:					3a) Delta ID No.:					3a) Delta ID No.:				
3b) Tempo SI ID No.:		EQU131			3b) Tempo SI ID No.:		EQU112			3b) Tempo SI ID No.:		EQU113			3b) Tempo SI ID No.:		EQU114			3b) Tempo SI ID No.:		EQU115			3b) Tempo SI ID No.:		EQU177-E-QU007 (COMG10)			3b) Tempo SI ID No.:		EQU2058-216 (COMG11)			3b) Tempo SI ID No.:		EQU101	
Description:		MAU 9N			Description		MAU 11N			Description		Toolroom 1 Abrasive Blasting			Description		Toolroom 2 Abrasive Blasting			Description		DC Abrasive Blasting			Description		Natural Gas Sources - North Building			Description:		Natural Gas Sources - South Building			Description		CF Scrap P	
3c)	3d)	3e) Potential			3c)	3d)	3e) Potential			3c)	3d)	3e) Potential			3c)	3d)	3e) Potential			3c)	3d)	3e) Potential			3c)	3d)	3e) Potential			3c)	3d)	3e) Potential			3c)	3d)	3e) Potential		
Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Pollutant Name	CAS #	Lbs per Hr
PM	NA	0.02	0.07	0.07	PM	NA	0.03	0.15	0.15	PM	NA	6.29E-04	13.75	2.75E-03	PM	NA	4.62E-04	10.12	2.02E-03	PM	NA	4.31E-04	9.22	1.84E-03	PM	NA	0.06	0.35	0.29	PM	NA	0.02	0.07	0.06	PM	NA	0.03
PM10	NA	0.02	0.07	0.07	PM10	NA	0.03	0.15	0.15	PM10	NA	6.29E-04	13.75	2.75E-03	PM10	NA	4.62E-04	10.12	2.02E-03	PM10	NA	4.31E-04	9.22	1.84E-03	PM10	NA	0.06	0.35	0.29	PM10	NA	0.02	0.07	0.06	PM10	NA	0.03
PM2.5	NA	0.02	0.07	0.07	PM2.5	NA	0.03	0.15	0.15	PM2.5	NA	6.29E-04	13.75	2.75E-03	PM2.5	NA	4.62E-04	10.12	2.02E-03	PM2.5	NA	4.31E-04	9.22	1.84E-03	PM2.5	NA	0.06	0.35	0.29	PM2.5	NA	0.02	0.07	0.06	PM2.5	NA	0.03
SO2	NA	1.29E-03	5.66E-03	5.66E-03	SO2	NA	2.71E-03	0.01	0.01	SO2	NA	---	---	---	SO2	NA	---	---	---	SO2	NA	---	---	---	SO2	NA	5.29E-03	0.03	0.02	SO2	NA	1.35E-03	5.91E-03	6.63E-03	SO2	NA	8.82E-04
NOx	NA	0.22	0.94	0.94	NOx	NA	0.45	1.98	1.98	NOx	NA	---	---	---	NOx	NA	---	---	---	NOx	NA	---	---	---	NOx	NA	1.01	4.59	3.44	NOx	NA	0.22	0.98	0.74	NOx	NA	0.15
CO	NA	0.18	0.79	0.79	CO	NA	0.38	1.66	1.66	CO	NA	---	---	---	CO	NA	---	---	---	CO	NA	---	---	---	CO	NA	0.68	3.86	2.89	CO	NA	0.19	0.83	0.62	CO	NA	0.12
VOC	NA	0.01	0.05	0.05	VOC	NA	0.02	0.11	0.11	VOC	NA	---	---	---	VOC	NA	---	---	---	VOC	NA	---	---	---	VOC	NA	0.06	0.25	0.19	VOC	NA	0.01	0.05	0.04	VOC	NA	8.09E-03
Lead	NA	NA	NA	NA	Lead	NA	NA	NA	NA	Lead	NA	1.32E-05	0.0577	5.77E-05	Lead	NA	9.71E-06	9.71E-03	4.25E-05	Lead	NA	9.04E-06	0.0387	3.87E-05	Lead	NA	5.24E-06	2.30E-03	1.72E-05	Lead	NA	1.11E-06	4.91E-06	3.69E-06	Lead	NA	3.23E-05
CO2	NA	256.32	1124.89	1124.89	CO2	NA	538.84	2363.68	2363.68	CO2	NA	---	---	---	CO2	NA	---	---	---	CO2	NA	---	---	---	CO2	NA	1.252	5.479	4.016.32	CO2	NA	268	1.175	881.12	CO2	NA	176.47
CH4	NA	4.83E-03	0.02	0.02	CH4	NA	0.01	0.04	0.04	CH4	NA	---	---	---	CH4	NA	---	---	---	CH4	NA	---	---	---	CH4	NA	2.35E-02	3.03E-01	0.08	CH4	NA	5.04E-03	2.21E-02	0.02	CH4	NA	3.03E-03
N2O	NA	4.83E-04	2.13E-03	2.13E-03	N2O	NA	1.01E-03	4.44E-03	4.44E-03	N2O	NA	---	---	---	N2O	NA	---	---	---	N2O	NA	---	---	---	N2O	NA	2.35E-03	3.03E-02	7.73E-03	N2O	NA	5.04E-04	2.21E-03	1.66E-03	N2O	NA	3.03E-04
Total GHG (CO2e)	NA	257	1126	1126	Total GHG (CO2e)	NA	539	2363	2363	Total GHG (CO2e)	NA	---	---	---	Total GHG (CO2e)	NA	---	---	---	Total GHG (CO2e)	NA	---	---	---	Total GHG (CO2e)	NA	1.252	5.484	4112.73	Total GHG (CO2e)	NA	269	1.176	882.04	Total GHG (CO2e)	NA	175.65
1,1,1-Trichloroethane	71-55-6	---	---	---	1,1,1-Trichloroethane	71-55-6	---	---	---	1,1,1-Trichloroethane	71-55-6	---	---	---	1,1,1-Trichloroethane	71-55-6	---	---	---	1,1,1-Trichloroethane	71-55-6	---	---	---	1,1,1-Trichloroethane	71-55-6	---	---	---	1,1,1-Trichloroethane	71-55-6	---	---	---	1,1,1-Trichloroethane	71-55-6	---
1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	1,1,2,2-Tetrachloroethane	79-34-5	---
1,1,2-Trichloroethane	79-00-5	---	---	---	1,1,2-Trichloroethane	79-00-5	---	---	---	1,1,2-Trichloroethane	79-00-5	---	---	---	1,1,2-Trichloroethane	79-00-5	---	---	---	1,1,2-Trichloroethane	79-00-5	---	---	---	1,1,2-Trichloroethane	79-00-5	---	---	---	1,1,2-Trichloroethane	79-00-5	---	---	---	1,1,2-Trichloroethane	79-00-5	---
1,1-Dichloroethane	75-34-3	---	---	---	1,1-Dichloroethane	75-34-3	---	---	---	1,1-Dichloroethane	75-34-3	---	---	---	1,1-Dichloroethane	75-34-3	---	---	---	1,1-Dichloroethane	75-34-3	---	---	---	1,1-Dichloroethane	75-34-3	---	---	---	1,1-Dichloroethane	75-34-3	---	---	---	1,1-Dichloroethane	75-34-3	---
1,1-Dichloroethene	75-35-4	---	---	---	1,1-Dichloroethene	75-35-4	---	---	---	1,1-Dichloroethene	75-35-4	---	---	---	1,1-Dichloroethene	75-35-4	---	---	---	1,1-Dichloroethene	75-35-4	---	---	---	1,1-Dichloroethene	75-35-4	---	---	---	1,1-Dichloroethene	75-35-4	---	---	---	1,1-Dichloroethene	75-35-4	---
1,2,4-Trichlorobenzene	120-82-1	---	---	---	1,2,4-Trichlorobenzene	120-82-1	---	---	---	1,2,4-Trichlorobenzene	120-82-1	---	---	---	1,2,4-Trichlorobenzene	120-82-1	---	---	---	1,2,4-Trichlorobenzene	120-82-1	---	---	---	1,2,4-Trichlorobenzene	120-82-1	---	---	---	1,2,4-Trichlorobenzene	120-82-1	---	---	---	1,2,4-Trichlorobenzene	120-82-1	---
1,2-Dibromoethane	106-93-4	---	---	---	1,2-Dibromoethane	106-93-4	---	---	---	1,2-Dibromoethane	106-93-4	---	---	---	1,2-Dibromoethane	106-93-4	---	---	---	1,2-Dibromoethane	106-93-4	---	---	---	1,2-Dibromoethane	106-93-4	---	---	---	1,2-Dibromoethane	106-93-4	---	---	---	1,2-Dibromoethane	106-93-4	---
1,2-Dichloroethane	107-06-2	---	---	---	1,2-Dichloroethane	107-06-2	---	---	---	1,2-Dichloroethane	107-06-2	---	---	---	1,2-Dichloroethane	107-06-2	---	---	---	1,2-Dichloroethane	107-06-2	---	---	---	1,2-Dichloroethane	107-06-2	---	---	---	1,2-Dichloroethane	107-06-2	---	---	---	1,2-Dichloroethane	107-06-2	---
1,2-Dichloropropane	78-87-5	---	---	---	1,2-Dichloropropane	78-87-5	---	---	---	1,2-Dichloropropane	78-87-5	---	---	---	1,2-Dichloropropane	78-87-5	---	---	---	1,2-Dichloropropane	78-87-5	---	---	---	1,2-Dichloropropane	78-87-5	---	---	---	1,2-Dichloropropane	78-87-5	---	---	---	1,2-Dichloropropane	78-87-5	---
1,4-Dichlorobenzene	106-46-7	---	---	---	1,4-Dichlorobenzene	106-46-7	---	---	---	1,4-Dichlorobenzene	106-46-7	---	---	---	1,4-Dichlorobenzene	106-46-7	---	---	---	1,4-Dichlorobenzene	106-46-7	---	---	---	1,4-Dichlorobenzene	106-46-7	---	---	---	1,4-Dichlorobenzene	106-46-7	---	---	---	1,4-Dichlorobenzene	106-46-7	---
4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	4-Methyl-2-pentanone(MIBK)	108-10-1	---
Acetaldehyde	75070	---	---	---	Acetaldehyde	75070	---	---	---	Acetaldehyde	75070	---	---	---	Acetaldehyde	75070	---	---	---	Acetaldehyde	75070	---	---	---	Acetaldehyde	75070	---	---	---	Acetaldehyde	75070	---	---	---	Acetaldehyde	75070	---
1,3-Butadiene	106990	---	---	---	1,3-Butadiene	106990	---	---	---	1,3-Butadiene	106990	---	---	---	1,3-Butadiene	106990	---	---	---	1,3-Butadiene	106990	---	---	---	1,3-Butadiene	106990	---	---	---	1,3-Butadiene	106990	---	---	---	1,3-Butadiene	106990	---
Arsenic	7440-38-2	4.33E-07	1.89E-06	1.89E-06	Arsenic	7440-38-2	9.03E-07	3.96E-06	3.96E-06	Arsenic	7440-38-2	---	---	---	Arsenic	7440-38-2	---	---	---	Arsenic	7440-38-2	---	---	---	Arsenic	7440-38-2	2.10E-06	9.18E-06	9.89E-06	Arsenic	7440-38-2	4.50E-07	1.97E-06	1.48E-06	Arsenic	7440-38-2	2.94E-07
Benzene	71-43-2	4.62E-06	1.99E-05	1.99E-05	Benzene	71-43-2	9.49E-06	4.15E-05	4.15E-05	Benzene	71-43-2	---	---	---	Benzene	71-43-2	---	---	---	Benzene	71-43-2	---	---	---	Benzene	71-43-2	2.20E-05	9.64E-05	7.23E-05	Benzene	71-43-2	4.72E-06	2.07E-05	1.55E-05	Benzene	71-43-2	3.09E-06
Benzyl chloride	100-44-7	---	---	---	Benzyl chloride	100-44-7	---	---	---	Benzyl chloride	100-44-7	---	---	---	Benzyl chloride	100-44-7	---	---	---	Benzyl chloride	100-44-7	---	---	---	Benzyl chloride	100-44-7	---	---	---	Benzyl chloride	100-44-7	---	---	---	Benzyl chloride	100-44-7	---
Biomethanol	75-09-2	---	---	---	Biomethanol	75-09-2	---	---	---	Biomethanol	75-09-2	---	---	---	Biomethanol	75-09-2	---	---	---	Biomethanol	75-09-2	---	---	---	Biomethanol	75-09-2	---	---	---	Biomethanol	75-09-2	---	---	---	Biomethanol	75-09-2	---
Bromomethane	74-83-9	---	---	---	Bromomethane	74-83-9	---	---	---	Bromomethane	74-83-9	---	---	---	Bromomethane	74-83-9	---	---	---	Bromomethane	74-83-9	---	---	---	Bromomethane	74-83-9	---	---	---	Bromomethane	74-83-9	---	---	---	Bromomethane	74-83-9	---
Beryllium	7440-41-7	2.59E-08	1.13E-07	1.13E-07	Beryllium	7440-41-7	5.42E-08	2.37E-07	2.37E-07	Beryllium	7440-41-7	---	---	---	Beryllium	7440-41-7	---	---	---	Beryllium	7440-41-7	---	---	---	Beryllium	7440-41-7	1.26E-07	5.51E-07	4.13E-07	Beryllium	7440-41-7	2.70E-08	1.18E-07	8.88E-08	Beryllium	7440-41-7	1.77E-08
Cadmium	7440-43-9	2.17E-06	1.04E-05	1.04E-05	Cadmium	7440-43-9	4.87E-06	2.18E-05	2.18E-05	Cadmium	7440-43-9	---	---	---	Cadmium	7440-43-9	---	---	---	Cadmium	7440-43-9	---	---	---	Cadmium	7440-43-9	1.13E-05	5.05E-05	3.79E-05	Cadmium	7440-43-9	2.47E-06	1.08E-05	8.12E-06	Cadmium	7440-43-9	1.62E-06
Carbon disulfide	75-15-0	---	---	---	Carbon disulfide	75-15-0	---	---	---	Carbon disulfide	75-15-0	---	---	---	Carbon disulfide	75-15-0	---	---	---	Carbon disulfide	75-15-0	---	---	---	Carbon disulfide	75-15-0	---	---	---	Carbon disulfide	75-15-0	---	---	---	Carbon disulfide	75-15-0	---
Carbon tetrachloride	56-23-5	---	---	---	Carbon tetrachloride	56-23-5	---	---	---	Carbon tetrachloride	56-23-5	---	---	---	Carbon tetrachloride	56-23-5	---	---	---	Carbon tetrachloride	56-23-5	---	---	---	Carbon tetrachloride	56-23-5	---	---	---	Carbon tetrachloride	56-23-5	---	---	---	Carbon tetrachloride	56-23-5	---
Chromium	7440-47-3	3.01E-06	1.32E-05	1.32E-05	Chromium	7440-47-3	6.42E-06	2.77E-05	2.77E-05	Chromium	7440-47-3	---	---	---	Chromium	7440-47-3	---	---	---	Chromium	7440-47-3	---	---	---	Chromium	7440-47-3	1.47E-05	6.43E-05	4.82E-05	Chromium	7440-47-3	3.15E-06	1.38E-05	1.03E-05	Chromium	7440-47-3	2.06E-06
Chlorobenzene	108-90-7	---	---	---	Chlorobenzene	108-90-7	---	---	---	Chlorobenzene	108-90-7	---	---	---	Chlorobenzene	108-90-7	---	---	---	Chlorobenzene	108-90-7	---	---	---	Chlorobenzene	108-90-7	---	---	---	Chlorobenzene	108-90-7	---	---	---	Chlorobenzene	108-90-7	---
Chloroethane	75-00-3	---	---	---	Chloroethane	75-00-3	---	---	---	Chloroethane	75-00-3	---	---	---	Chloroethane	75-00-3	---	---	---	Chloroethane	75-00-3	---	---	---	Chloroethane	75-00-3	---	---	---	Chloroethane	75-00-3	---	---	---	Chloroethane	75-00-3	---
Chloroform	67-66-3	---	---	---	Chloroform	67-66-3	---	---	---	Chloroform	67-66-3	---	---	---	Chloroform	67-66-3	---	---	---	Chloroform	67-66-3	---	---	---	Chloroform	67-66-3	---	---	---	Chloroform	67-66-3	---	---	---	Chloroform	67-66-3	---
Chloromethane	74-87-3	---	---	---	Chloromethane	74-87-3	---	---	---	Chloromethane	74-87-3	---	---	---	Chloromethane	74-87-3	---	---	---	Chloromethane	74-87-3	---	---	---	Chloromethane	74-87-3	---	---	---	Chloromethane	74-87-3	---	---	---	Chloromethane	74-87-3	---
Cobalt	7440-48-4	1.91E-07	7.93E-07	7.92E-07	Cobalt	7440-48-4	3.79E-07	1.66E-06	1.66E-06	Cobalt	7440-48-4	---	---	---	Cobalt	7440-48-4	---	---	---	Cobalt	7440-48-4	---	---	---	Cobalt	7440-48-4	8.83E-07	3.86E-06	2.89E-06	Cobalt	7440-48-4	1.86E-07	8.27E-07	6.20E-07	Cobalt	7440-48-4	1.24E-07
Dichlorobenzene	25321-22-6	2.59E-06	1.13E-05	1.13E-05	Dichlorobenzene	25321-22-6	5.42E-06	2.37E-05	2.37E-05	Dichlorobenzene	25321-22-6	---	---	---	Dichlorobenzene	25321-22-6	---	---	---	Dichlorobenzene	25321-22-6	---	---	---	Dichlorobenzene	25321-22-6	1.26E-05	5.51E-05	4.13E-05	Dichlorobenzene	25321-22-6	2.70E-06	1.18E-05	8.86E-06	Dichlorobenzene	25321-22-6	1.76E-06
Ethyl Benzene	100-41-4	---	---	---	Ethyl Benzene	100-41-4	---	---	---	Ethyl Benzene	100-41-4	---	---	---	Ethyl Benzene	100-41-4	---	---	---	Ethyl Benzene	100-41-4	---	---	---	Ethyl Benzene	100-41-4	---	---	---	Ethyl Benzene	100-41-4	---	---	---	Ethyl Benzene	100-41-4	---
Formaldehyde	50-00-0	1.61E-04	7.07E-04	7.07E-04	Formaldehyde	50-00-0	3.39E-04	1.48E-03	1.48E-03	Formaldehyde	50-00-0	---	---	---	Formaldehyde	50-00-0	---	---	---	Formaldehyde	50-00-0	---	---	---	Formaldehyde	50-00-0	7.86E-04	3.44E-03	2.58E-03	Formaldehyde	50-00-0	1.68E-04	7.38E-04	5.54E-04	Formaldehyde	50-00-0	1.10E-04
Hexachlorobutadiene	87-68-3	---	---	---	Hexachlorobutadiene	87-68-3	---	---	---	Hexachlorobutadiene	87-68-3	---	---	---	Hexachlorobutadiene	87-68-3	---	---	---	Hexachlorobutadiene	87-68-3	---	---	---	Hexachlorobutadiene	87-68-3	---	---	---	Hexachlorobutadiene	87-68-3	---	---	---	Hexachlorobutadiene	87-68-3	---
Hexane	110-54-3	3.87E-03	0.02	0.02	Hexane	110-54-3	8.13E-03	0.04	0.04	Hexane	110-54-3	---	---	---	Hexane	110-54-3	---	---	---	Hexane	110-54-3	---	---	---	Hexane	110-54-3	0.02	0.08	0.06	Hexane	110-54-3	4.05E-03	0.02	0.01	Hexane	110-54-3	2.65E-03
Manganese	7439-96-5	8.18E-07	3.58E-06	3.58E-06	Manganese	7439-96-5	1.72E-06	7.52E-06	7.52E-06	Manganese	7439-96-5	---	---	---	Manganese	7439-96-5	---	---	---	Manganese	7439-96-5	---	---	---	Manganese	7439-96-5	3.99E-06	1.74E-05	1.31E-05	Manganese	7439-96-5	8.54E-07	3.74E-06	2.81E-06	Manganese	7439-96-5	5.59E-07
Mercury	7439-97-6	5.83E-07	2.45E-06	2.45E-06	Mercury	7439-97-6	1.17E-06	5.14E-06	5.14E-06	Mercury	7439-97-6	---	---	---	Mercury	7439-97-6	---	---	---	Mercury	7439-97-6	---	---	---	Mercury	7439-97-6	2.73E-06	1.19E-05	9.86E-06	Mercury	7439-97-6	5.84E-07	2.56E-06	1.92E-06	Mercury	7439-97-6	3.83E-07
Methylene Chloride	75-09-2	---	---	---	Methylene Chloride	75-09-2	---	---	---	Methylene Chloride	75-09-2	---	---	---	Methylene Chloride	75-09-2	---	---	---	Methylene Chloride	75-09-2	---	---	---	Methylene Chloride	75-09-2	---	---	---	Methylene Chloride	75-09-2	---	---	---	Methylene Chloride	75-09-2	---
Methyl tert-butyl ether	1634-04-4	---	---	---	Methyl tert-butyl ether	1634-04-4	---	---	---	Methyl tert-butyl ether	1634-04-4	---	---	---	Methyl tert-butyl ether	1634-04-4	---	---	---	Methyl tert-butyl ether	1634-04-4	---	---	---	Methyl tert-butyl ether	1634-04-4	---	---	---	Methyl tert-butyl ether	1634-04-4	---	---	---	Methyl tert-butyl ether	1634-04-4	---
Naphthalene	91-20-3	1.21E-06	5.75E-06	5.75E-06	Naphthalene	91-20-3	2.76E-06	1.21E-05	1.21E-05	Naphthalene	91-20-3	---	---	---	Naphthalene	91-20-3	---	---	---	Naphthalene	91-20-3	---	---	---	Naphthalene	91-20-3	6.39E-06	2.80E-05	2.10E-05	Naphthalene	91-20-3	1.37E-06	6.01E-06	4.50E-06	Naphthalene	91-20-3	8.97E-07
Nickel	7440-02-0	4.33E-06	1.89E-05	1.89E-05	Nickel	7440-02-0	9.49E-06	4.15E-05	4.15E-05	Nickel	7440-02-0	---	---	---	Nickel	7440-02-0	---	---	---	Nickel	7440-02-0	---	---	---	Nickel	7440-02-0	2.20E-05	9.64E-05	7.23E-05	Nickel	7440-02-0	4.72E-06	2.07E-05	1.55E-05	Nickel	7440-02-0	3.09E-06
PAH (not including Naphthalene)		---	---	---	PAH (not including Naphthalene)		---	---	---	PAH (not including Naphthalene)		---	---	---	PAH (not including Naphthalene)		---	---	---	PAH (not including Naphthalene)		---	---	---	PAH (not including Naphthalene)		---	---	---	PAH (not including Naphthalene)		---	---	---	PAH (not including Naphthalene)		---	---	---	PAH (not including Naphthalene)		---
POM		3.90E-07	8.03E-07	8.02E-07	POM		3.66E-07	1.74E-06	1.74E-06	POM		---	---	---	POM		---	---	---	POM		---	---	---	POM		9.25E-07	4.05E-06	3.04E-06	POM		1.98E-07	8.68E-07	6.51E-07	POM		1.30E-07
Propylene	115-07-1	---	---	---	Propylene	115-07-1	---	---	---	Propylene	115-07-1	---	---	---	Propylene	115-07-1	---	---	---	Propylene	115-07-1	---	---	---	Propylene	115-07-1	---	---	---	Propylene	115-07-1	---	---	---	Propylene	115-07-1	---
Selenium	7782-49-2	3.17E-06	3.29E-07	2.26E-07	Selenium	7782-49-2	1.08E-07	4.75E-07	4.75E-07	Selenium	7782-49-2	---	---	---	Selenium	7782-49-2	---	---	---	Selenium	7782-49-2	---	---	---	Selenium	7782-49-2	2.52E-07	1.10E-06	8.26E-07	Selenium	7782-49-2	5.40E-08	2.36E-07	1.77E-07	Selenium	7782-49-2	3.53E-08
Styrene	100-42-5	---	---	---	Styrene	100-42-5	---	---	---	Styrene	100-42-5	---	---	---	Styrene	100-42-5	---	---	---	Styrene	100-42-5	---	---	---	Styrene	100-42-5	---	---	---	Styrene	100-42-5	---	---	---	Styrene	100-42-5	---
Tetrachloroethene	127-18-4	---	---	---	Tetrachloroethene	127-18-4	---	---	---	Tetrachloroethene	127-18-4	---	---	---	Tetrachloroethene	127-18-4	---	---	---	Tetrachloroethene	127-18-4	---	---	---	Tetrachloroethene	127-18-4	---	---	---	Tetrachloroethene	127-18-4	---	---	---	Tetrachloroethene	127-18-4	---
Toluene	108-88-3	7.33E-06	3.21E-05	3.21E-05	Toluene	108-88-3	1.54E-05	6.73E-05	6.73E-05	Toluene	108-88-3	---	---	---	Toluene	108-88-3	---	---	---	Toluene	108-88-3	---	---	---	Toluene	108-88-3	3.56E-05	1.56E-04	1.17E-04	Toluene	108-88-3	7.64E-06	3.35E-05	2.51E-05	Toluene	108-88-3	5.00E-06
Trichloroethene	79-01-6	---	---	---	Trichloroethene	79-01-6	---	---	---	Trichloroethene	79-01-6	---	---	---	Trichloroethene	79-01-6	---	---	---	Trichloroethene	79-01-6	---	---	---	Trichloroethene	79-01-6	---	---	---	Trichloroethene	79-01-6	---	---	---	Trichloroethene	79-01-6	---
Vinyl Acetate	108-05-4	---	---	---	Vinyl Acetate	108-05-4	---	---	---	Vinyl Acetate	108-05-4	---	---	---	Vinyl Acetate	108-05-4	---	---	---	Vinyl Acetate	108-05-4	---	---	---	Vinyl Acetate	108-05-4	---	---	---	Vinyl Acetate	108-05-4	---	---	---	Vinyl Acetate	108-05-4	---
Vinyl Chloride	75-01-4	---	---	---	Vinyl Chloride	75-01-4	---	---	---	Vinyl Chloride	75-01-4	---	---	---	Vinyl Chloride	75-01-4	---	---	---	Vinyl Chloride	75-01-4	---	---	---	Vinyl Chloride	75-01-4	---	---	---	Vinyl Chloride	75-01-4	---	---	---	Vinyl Chloride	75-01-4	---
Xylenes	1330-20-7	---	---	---	Xylenes	1330-20-7	---	---	---	Xylenes	1330-20-7	---	---	---	Xylenes	1330-20-7	---	---	---	Xylenes	1330-20-7	---	---	---	Xylenes	1330-20-7	---	---	---	Xylenes	1330-20-7	---	---	---	Xylenes	1330-20-7	---
Total HAPs	NA	4.65E-03	0.02	0.02	Total HAPs	NA	8.53E-03	0.04	0.04	Total HAPs	NA	---	---	---	Total HAPs	NA	---	---	---	Total HAPs	NA	---	---	---	Total HAPs	NA	0.02	0.09	0.07	Total HAPs	NA	4.25E-03	0.02	0.01	Total HAPs	NA	2.78E-03

Alternate Format

GI-07 Spreadsheet

Facility Emmison Summary
Air Quality Permit Program
Doc Type: Permit Application

			3a) Delta ID No.:						3a) Delta ID No.:					
			3b) Tempo SI ID No.:			EQU0102			3b) Tempo SI ID No.:			EQU0103		
ri (Large Billet Pot)			Description			Scrap Pot (Small Billet Pot)			Description			Doe Run Melt Pot		
3e) Potential			3f)	3c)	3d)	3e) Potential			3f)	3c)	3d)	3e) Potential			3f)
Unc tpy	Limited tpy	Actual tpy	Pollutant Name	CAS #	Lbs per hr	Unc tpy	Limited tpy	Actual tpy	Pollutant Name	CAS #	Lbs per hr	Unc tpy	Limited tpy	Actual tpy
1.17	0.09	---	PM	NA	0.01	0.39	0.03	---	PM	NA	6.31E-03	0.45	0.03	---
1.18	0.09	---	PM10	NA	0.01	0.39	0.09	---	PM10	NA	6.17E-03	0.45	0.03	---
1.18	0.09	---	PM2.5	NA	0.01	0.39	0.09	---	PM2.5	NA	6.17E-03	0.45	0.03	---
3.85E-03	3.85E-03	---	SO2	NA	2.94E-04	1.29E-03	1.29E-03	---	SO2	NA	2.94E-04	1.29E-03	1.29E-03	---
0.64	0.64	---	NOx	NA	0.05	0.21	0.21	---	NOx	NA	0.05	0.21	0.21	---
0.54	0.54	---	CO	NA	0.04	0.18	0.18	---	CO	NA	0.04	0.18	0.18	---
0.04	0.04	---	VOC	NA	2.70E-03	0.01	0.01	---	VOC	NA	2.70E-03	0.01	0.01	---
3.56E-04	5.15E-05	---	Lead	NA	1.74E-05	1.43E-04	2.01E-05	---	Lead	NA	8.49E-06	1.63E-04	2.36E-05	---
768.04	768.04	---	CO2	NA	58.49	256.18	256.18	---	CO2	NA	58.49	256.18	256.18	---
1.45E-02	1.45E-03	---	CH4	NA	1.10E-03	4.83E-03	4.82E-03	---	CH4	NA	1.10E-03	4.83E-03	4.82E-03	---
1.45E-02	1.45E-03	---	N2O	NA	1.10E-06	4.83E-06	4.82E-06	---	N2O	NA	1.10E-06	4.83E-06	4.82E-06	---
769.33	769.33	---	Total GHG (CO2e)	NA	58.55	256.44	256.44	---	Total GHG (CO2e)	NA	58.55	256.44	256.44	---
---	---	---	1,1,1-Trichloroethane	71-55-6	---	---	---	---	1,1,1-Trichloroethane	71-55-6	---	---	---	---
---	---	---	1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---	1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---
---	---	---	1,1,2-Trichloroethane	79-00-5	---	---	---	---	1,1,2-Trichloroethane	79-00-5	---	---	---	---
---	---	---	1,1-Dichloroethane	75-34-3	---	---	---	---	1,1-Dichloroethane	75-34-3	---	---	---	---
---	---	---	1,1-Dichloroethene	75-35-4	---	---	---	---	1,1-Dichloroethene	75-35-4	---	---	---	---
---	---	---	1,2,4-Trichlorobenzene	120-82-1	---	---	---	---	1,2,4-Trichlorobenzene	120-82-1	---	---	---	---
---	---	---	1,2-Dibromoethane	106-93-4	---	---	---	---	1,2-Dibromoethane	106-93-4	---	---	---	---
---	---	---	1,2-Dichloroethane	107-06-2	---	---	---	---	1,2-Dichloroethane	107-06-2	---	---	---	---
---	---	---	1,2-Dichloropropane	78-87-5	---	---	---	---	1,2-Dichloropropane	78-87-5	---	---	---	---
---	---	---	1,4-Dichlorobenzene	106-46-7	---	---	---	---	1,4-Dichlorobenzene	106-46-7	---	---	---	---
---	---	---	4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---	4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---
---	---	---	Acetaldehyde	75070	---	---	---	---	Acetaldehyde	75070	---	---	---	---
---	---	---	1,3-Butadiene	106990	---	---	---	---	1,3-Butadiene	106990	---	---	---	---
1.29E-06	1.29E-06	---	Arsenic	7440-38-2	9.83E-09	6.29E-07	6.29E-07	---	Arsenic	7440-38-2	9.83E-09	6.29E-07	6.29E-07	---
1.35E-05	1.35E-05	---	Benzene	71-43-2	1.03E-06	4.51E-06	4.51E-06	---	Benzene	71-43-2	1.03E-06	4.51E-06	4.51E-06	---
---	---	---	Benzyl chloride	100-44-7	---	---	---	---	Benzyl chloride	100-44-7	---	---	---	---
---	---	---	Biphenyl	92-52-4	---	---	---	---	Biphenyl	92-52-4	---	---	---	---
---	---	---	Bromoform	75-25-2	---	---	---	---	Bromoform	75-25-2	---	---	---	---
---	---	---	Bromomethane	74-83-9	---	---	---	---	Bromomethane	74-83-9	---	---	---	---
7.73E-09	7.73E-09	---	Beryllium	7440-41-7	5.89E-09	2.58E-08	2.58E-08	---	Beryllium	7440-41-7	5.89E-09	2.58E-08	2.58E-08	---
7.05E-08	7.05E-08	---	Cadmium	7440-43-9	5.35E-07	2.35E-06	2.34E-06	---	Cadmium	7440-43-9	5.35E-07	2.35E-06	2.34E-06	---
---	---	---	Carbon disulfide	75-15-0	---	---	---	---	Carbon disulfide	75-15-0	---	---	---	---
---	---	---	Carbon tetrachloride	56-23-5	---	---	---	---	Carbon tetrachloride	56-23-5	---	---	---	---
9.02E-06	9.02E-06	---	Chromium	7440-47-3	6.85E-07	4.01E-06	4.01E-06	---	Chromium	7440-47-3	6.85E-07	3.01E-06	3.01E-06	---
---	---	---	Chlorobenzene	108-90-7	---	---	---	---	Chlorobenzene	108-90-7	---	---	---	---
---	---	---	Chloroethane	75-00-3	---	---	---	---	Chloroethane	75-00-3	---	---	---	---
---	---	---	Chloroform	67-66-3	---	---	---	---	Chloroform	67-66-3	---	---	---	---
---	---	---	Chloromethane	74-87-3	---	---	---	---	Chloromethane	74-87-3	---	---	---	---
5.41E-07	5.41E-07	---	Cobalt	7440-48-4	4.12E-08	1.80E-07	1.80E-07	---	Cobalt	7440-48-4	4.12E-08	1.80E-07	1.80E-07	---
7.73E-06	7.73E-06	---	Dichlorobenzene	25321-22-6	5.89E-07	2.58E-06	2.58E-06	---	Dichlorobenzene	25321-22-6	5.89E-07	2.58E-06	2.58E-06	---
---	---	---	Ethyl Benzene	100-41-4	---	---	---	---	Ethyl Benzene	100-41-4	---	---	---	---
4.83E-04	4.83E-04	---	Formaldehyde	50-00-0	3.68E-05	1.61E-04	1.61E-04	---	Formaldehyde	50-00-0	3.68E-05	1.61E-04	1.61E-04	---
---	---	---	Hexachlorobutadiene	87-68-3	---	---	---	---	Hexachlorobutadiene	87-68-3	---	---	---	---
0.01	0.01	---	Hexane	110-54-3	8.82E-04	3.86E-03	3.86E-03	---	Hexane	110-54-3	8.82E-04	3.86E-03	3.86E-03	---
2.45E-06	2.45E-06	---	Manganese	7439-96-5	1.86E-07	8.16E-07	8.16E-07	---	Manganese	7439-96-5	1.86E-07	8.16E-07	8.16E-07	---
1.67E-06	1.67E-06	---	Mercury	7439-97-6	1.27E-07	5.55E-07	5.55E-07	---	Mercury	7439-97-6	1.27E-07	5.55E-07	5.55E-07	---
---	---	---	Methylene Chloride	75-09-2	---	---	---	---	Methylene Chloride	75-09-2	---	---	---	---
---	---	---	Methyl tert-butyl ether	1634-04-4	---	---	---	---	Methyl tert-butyl ether	1634-04-4	---	---	---	---
3.93E-06	3.93E-06	---	Naphthalene	91-20-3	2.99E-07	1.31E-06	1.31E-06	---	Naphthalene	91-20-3	2.99E-07	1.31E-06	1.31E-06	---
1.35E-05	1.35E-05	---	Nickel	7440-02-0	1.03E-06	4.51E-06	4.51E-06	---	Nickel	7440-02-0	1.03E-06	4.51E-06	4.51E-06	---
---	---	---	PAH (not including Naphthalene)		---	---	---	---	PAH (not including Naphthalene)		---	---	---	---
5.68E-07	5.68E-07	---	POM		4.31E-08	1.89E-07	1.89E-07	---	POM		4.31E-08	1.89E-07	1.89E-07	---
---	---	---	Propylene	115-07-1	---	---	---	---	Propylene	115-07-1	---	---	---	---
1.55E-07	1.55E-07	---	Selenium	7782-49-2	1.18E-08	5.15E-08	5.15E-08	---	Selenium	7782-49-2	1.18E-08	5.15E-08	5.15E-08	---
---	---	---	Styrene	100-42-5	---	---	---	---	Styrene	100-42-5	---	---	---	---
---	---	---	Tetrachloroethene	127-18-4	---	---	---	---	Tetrachloroethene	127-18-4	---	---	---	---
2.19E-05	2.19E-05	---	Toluene	108-88-3	1.67E-06	7.30E-06	7.30E-06	---	Toluene	108-88-3	1.67E-06	7.30E-06	7.30E-06	---
---	---	---	Trichloroethene	79-01-6	---	---	---	---	Trichloroethene	79-01-6	---	---	---	---
---	---	---	Vinyl Acetate	108-05-4	---	---	---	---	Vinyl Acetate	108-05-4	---	---	---	---
---	---	---	Vinyl Chloride	75-01-4	---	---	---	---	Vinyl Chloride	75-01-4	---	---	---	---
---	---	---	Xylenes	1330-20-7	---	---	---	---	Xylenes	1330-20-7	---	---	---	---
0.01	0.01	---	Total HAPs	NA	9.21E-04	4.03E-03	4.03E-03	---	Total HAPs	NA	9.21E-04	4.03E-03	4.03E-03	---

Alternate Format

GI-07 Spreadsheet

Facility Emmison Summary

Air Quality Permit Program

Doc Type: Permit Application

(1a) Delta ID No.:							(1a) Delta ID No.:							(1a) Delta ID No.:							(1a) Delta ID No.:							(1a) Delta ID No.:						
(1b) Tempo SI ID No.:		EQUI104					(1b) Tempo SI ID No.:		EQUI221					(1b) Tempo SI ID No.:		EQUI121					(1b) Tempo SI ID No.:		EQUI122					(1b) Tempo SI ID No.:		EQUI123				
Description:		CF Pot (Collins Re-melt Pot)					Description:		Tin Pot					Description:		SC39					Description:		SC12					Description:		DC33				
(1c) Pollutant Name	(1d) CAS #	(1e) Potential				(1f) Actual tpy	(1c) Pollutant Name	(1d) CAS #	(1e) Potential				(1f) Actual tpy	(1c) Pollutant Name	(1d) CAS #	(1e) Potential				(1f) Actual tpy	(1c) Pollutant Name	(1d) CAS #	(1e) Potential				(1f) Actual tpy	(1c) Pollutant Name	(1d) CAS #	(1e) Potential				(1f) Actual tpy
		Lbs per Hr	Unc tpy	Limited tpy	Actual tpy				Lbs per Hr	Unc tpy	Limited tpy	Actual tpy				Lbs per Hr	Unc tpy	Limited tpy	Actual tpy				Lbs per Hr	Unc tpy	Limited tpy	Actual tpy				Lbs per Hr	Unc tpy	Limited tpy	Actual tpy	
PM	NA	0.04	2.47	0.08	—		PM	NA	0.03	9.42E-03	2.52E-06	—		PM	NA	0.01	2.17	0.04	—		PM	NA	0.03	2.49	0.13	—		PM	NA	0.01	2.85	0.06	—		PM	NA	0.02	1.24	0.04	—	
PM10	NA	0.04	2.50	0.08	—		PM10	NA	0.03	9.51E-03	2.55E-06	—		PM10	NA	0.01	2.17	0.04	—		PM10	NA	0.03	2.49	0.13	—		PM10	NA	0.01	2.85	0.06	—		PM10	NA	0.02	1.24	0.04	—	
PM2.5	NA	0.04	2.50	0.08	—		PM2.5	NA	0.03	9.51E-03	2.55E-06	—		PM2.5	NA	0.01	2.17	0.04	—		PM2.5	NA	0.03	2.49	0.13	—		PM2.5	NA	0.01	2.85	0.06	—		PM2.5	NA	0.02	1.24	0.04	—	
SO2	NA	2.05E-04	8.76E-04	8.76E-04	—		SO2	NA	—	—	—	—		SO2	NA	—	—	—	—		SO2	NA	—	—	—	—		SO2	NA	—	—	—	—		SO2	NA	—	—	—	—	
NOx	NA	0.03	0.15	0.15	—		NOx	NA	—	—	—	—		NOx	NA	—	—	—	—		NOx	NA	—	—	—	—		NOx	NA	—	—	—	—		NOx	NA	—	—	—	—	
CO	NA	0.03	0.12	0.12	—		CO	NA	—	—	—	—		CO	NA	—	—	—	—		CO	NA	—	—	—	—		CO	NA	—	—	—	—		CO	NA	—	—	—	—	
VOC	NA	1.63E-03	6.03E-03	6.03E-03	—		VOC	NA	—	—	—	—		VOC	NA	—	—	—	—		VOC	NA	—	—	—	—		VOC	NA	—	—	—	—		VOC	NA	—	—	—	—	
Lead	NA	7.01E-05	9.37E-04	1.29E-04	—		Lead	NA	—	—	—	—		Lead	NA	7.12E-05	0.02	3.12E-04	—		Lead	NA	2.16E-04	0.03	9.26E-04	—		Lead	NA	9.83E-05	0.03	4.31E-04	—		Lead	NA	1.23E-04	0.01	5.37E-04	—	
CO2	NA	39.77	174.20	174.20	—		CO2	NA	—	—	—	—		CO2	NA	—	—	—	—		CO2	NA	—	—	—	—		CO2	NA	—	—	—	—		CO2	NA	—	—	—	—	
CH4	NA	7.49E-04	3.28E-03	3.28E-03	—		CH4	NA	—	—	—	—		CH4	NA	—	—	—	—		CH4	NA	—	—	—	—		CH4	NA	—	—	—	—		CH4	NA	—	—	—	—	
N2O	NA	7.49E-05	3.28E-04	3.28E-04	—		N2O	NA	—	—	—	—		N2O	NA	—	—	—	—		N2O	NA	—	—	—	—		N2O	NA	—	—	—	—		N2O	NA	—	—	—	—	
Total GHG (CO2e)	NA	39.81	174.38	174.38	—		Total GHG (CO2e)	NA	—	—	—	—		Total GHG (CO2e)	NA	—	—	—	—		Total GHG (CO2e)	NA	—	—	—	—		Total GHG (CO2e)	NA	—	—	—	—		Total GHG (CO2e)	NA	—	—	—	—	
1,1,1-Trichloroethane	71-55-6	—	—	—	—		1,1,1-Trichloroethane	71-55-6	—	—	—	—		1,1,1-Trichloroethane	71-55-6	—	—	—	—		1,1,1-Trichloroethane	71-55-6	—	—	—	—		1,1,1-Trichloroethane	71-55-6	—	—	—	—		1,1,1-Trichloroethane	71-55-6	—	—	—	—	
1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—		1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—		1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—		1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—		1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—		1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—	
1,1,2-Trichloroethane	79-00-5	—	—	—	—		1,1,2-Trichloroethane	79-00-5	—	—	—	—		1,1,2-Trichloroethane	79-00-5	—	—	—	—		1,1,2-Trichloroethane	79-00-5	—	—	—	—		1,1,2-Trichloroethane	79-00-5	—	—	—	—		1,1,2-Trichloroethane	79-00-5	—	—	—	—	
1,1-Dichloroethane	75-34-3	—	—	—	—		1,1-Dichloroethane	75-34-3	—	—	—	—		1,1-Dichloroethane	75-34-3	—	—	—	—		1,1-Dichloroethane	75-34-3	—	—	—	—		1,1-Dichloroethane	75-34-3	—	—	—	—		1,1-Dichloroethane	75-34-3	—	—	—	—	
1,1-Dichloroethene	75-35-4	—	—	—	—		1,1-Dichloroethene	75-35-4	—	—	—	—		1,1-Dichloroethene	75-35-4	—	—	—	—		1,1-Dichloroethene	75-35-4	—	—	—	—		1,1-Dichloroethene	75-35-4	—	—	—	—		1,1-Dichloroethene	75-35-4	—	—	—	—	
1,2,4-Trichlorobenzene	120-82-1	—	—	—	—		1,2,4-Trichlorobenzene	120-82-1	—	—	—	—		1,2,4-Trichlorobenzene	120-82-1	—	—	—	—		1,2,4-Trichlorobenzene	120-82-1	—	—	—	—		1,2,4-Trichlorobenzene	120-82-1	—	—	—	—		1,2,4-Trichlorobenzene	120-82-1	—	—	—	—	
1,2-Dibromoethane	106-93-4	—	—	—	—		1,2-Dibromoethane	106-93-4	—	—	—	—		1,2-Dibromoethane	106-93-4	—	—	—	—		1,2-Dibromoethane	106-93-4	—	—	—	—		1,2-Dibromoethane	106-93-4	—	—	—	—		1,2-Dibromoethane	106-93-4	—	—	—	—	
1,2-Dichloroethane	107-06-2	—	—	—	—		1,2-Dichloroethane	107-06-2	—	—	—	—		1,2-Dichloroethane	107-06-2	—	—	—	—		1,2-Dichloroethane	107-06-2	—	—	—	—		1,2-Dichloroethane	107-06-2	—	—	—	—		1,2-Dichloroethane	107-06-2	—	—	—	—	
1,2-Dichloropropane	78-87-5	—	—	—	—		1,2-Dichloropropane	78-87-5	—	—	—	—		1,2-Dichloropropane	78-87-5	—	—	—	—		1,2-Dichloropropane	78-87-5	—	—	—	—		1,2-Dichloropropane	78-87-5	—	—	—	—		1,2-Dichloropropane	78-87-5	—	—	—	—	
1,4-Dichlorobenzene	106-46-7	—	—	—	—		1,4-Dichlorobenzene	106-46-7	—	—	—	—		1,4-Dichlorobenzene	106-46-7	—	—	—	—		1,4-Dichlorobenzene	106-46-7	—	—	—	—		1,4-Dichlorobenzene	106-46-7	—	—	—	—		1,4-Dichlorobenzene	106-46-7	—	—	—	—	
4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—		4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—		4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—		4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—		4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—		4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—	
Acetaldehyde	75070	—	—	—	—		Acetaldehyde	75070	—	—	—	—		Acetaldehyde	75070	—	—	—	—		Acetaldehyde	75070	—	—	—	—		Acetaldehyde	75070	—	—	—	—		Acetaldehyde	75070	—	—	—	—	
1,3-Butadiene	106990	—	—	—	—		1,3-Butadiene	106990	—	—	—	—		1,3-Butadiene	106990	—	—	—	—		1,3-Butadiene	106990	—	—	—	—		1,3-Butadiene	106990	—	—	—	—		1,3-Butadiene	106990	—	—	—	—	
Arsenic	7440-38-2	6.67E-09	2.92E-07	2.92E-07	—		Arsenic	7440-38-2	—	—	—	—		Arsenic	7440-38-2	—	—	—	—		Arsenic	7440-38-2	—	—	—	—		Arsenic	7440-38-2	—	—	—	—		Arsenic	7440-38-2	—	—	—	—	
Benzene	71-43-2	7.00E-07	3.07E-06	3.07E-06	—		Benzene	71-43-2	—	—	—	—		Benzene	71-43-2	—	—	—	—		Benzene	71-43-2	—	—	—	—		Benzene	71-43-2	—	—	—	—		Benzene	71-43-2	—	—	—	—	
Benzyl chloride	100-44-7	—	—	—	—		Benzyl chloride	100-44-7	—	—	—	—		Benzyl chloride	100-44-7	—	—	—	—		Benzyl chloride	100-44-7	—	—	—	—		Benzyl chloride	100-44-7	—	—	—	—		Benzyl chloride	100-44-7	—	—	—	—	
Biomethanol	75-65-0	—	—	—	—		Biomethanol	75-65-0	—	—	—	—		Biomethanol	75-65-0	—	—	—	—		Biomethanol	75-65-0	—	—	—	—		Biomethanol	75-65-0	—	—	—	—		Biomethanol	75-65-0	—	—	—	—	
Bromomethane	74-83-9	—	—	—	—		Bromomethane	74-83-9	—	—	—	—		Bromomethane	74-83-9	—	—	—	—		Bromomethane	74-83-9	—	—	—	—		Bromomethane	74-83-9	—	—	—	—		Bromomethane	74-83-9	—	—	—	—	
Beryllium	7440-41-7	8.00E-09	1.75E-08	1.75E-08	—		Beryllium	7440-41-7	—	—	—	—		Beryllium	7440-41-7	—	—	—	—		Beryllium	7440-41-7	—	—	—	—		Beryllium	7440-41-7	—	—	—	—		Beryllium	7440-41-7	—	—	—	—	
Cadmium	7440-43-9	3.67E-07	1.61E-06	1.61E-06	—		Cadmium	7440-43-9	—	—	—	—		Cadmium	7440-43-9	—	—	—	—		Cadmium	7440-43-9	—	—	—	—		Cadmium	7440-43-9	—	—	—	—		Cadmium	7440-43-9	—	—	—	—	
Carbon disulfide	75-15-0	—	—	—	—		Carbon disulfide	75-15-0	—	—	—	—		Carbon disulfide	75-15-0	—	—	—	—		Carbon disulfide	75-15-0	—	—	—	—		Carbon disulfide	75-15-0	—	—	—	—		Carbon disulfide	75-15-0	—	—	—	—	
Carbon tetrachloride	56-23-5	—	—	—	—		Carbon tetrachloride	56-23-5	—	—	—	—		Carbon tetrachloride	56-23-5	—	—	—	—		Carbon tetrachloride	56-23-5	—	—	—	—		Carbon tetrachloride	56-23-5	—	—	—	—		Carbon tetrachloride	56-23-5	—	—	—	—	
Chromium	7440-47-3	4.67E-07	2.04E-06	2.04E-06	—		Chromium	7440-47-3	—	—	—	—		Chromium	7440-47-3	—	—	—	—		Chromium	7440-47-3	—	—	—	—		Chromium	7440-47-3	—	—	—	—		Chromium	7440-47-3	—	—	—	—	
Chlorobenzene	108-90-7	—	—	—	—		Chlorobenzene	108-90-7	—	—	—	—		Chlorobenzene	108-90-7	—	—	—	—		Chlorobenzene	108-90-7	—	—	—	—		Chlorobenzene	108-90-7	—	—	—	—		Chlorobenzene	108-90-7	—	—	—	—	
Chloroethane	75-00-3	—	—	—	—		Chloroethane	75-00-3	—	—	—	—		Chloroethane	75-00-3	—	—	—	—		Chloroethane	75-00-3	—	—	—	—		Chloroethane	75-00-3	—	—	—	—		Chloroethane	75-00-3	—	—	—	—	
Chloroform	67-66-3	—	—	—	—		Chloroform	67-66-3	—	—	—	—		Chloroform	67-66-3	—	—	—	—		Chloroform	67-66-3	—	—	—	—		Chloroform	67-66-3	—	—	—	—		Chloroform	67-66-3	—	—	—	—	
Chloromethane	74-87-2	—	—	—	—		Chloromethane	74-87-2	—	—	—	—		Chloromethane	74-87-2	—	—	—	—		Chloromethane	74-87-2	—	—	—	—		Chloromethane	74-87-2	—	—	—	—		Chloromethane	74-87-2	—	—	—	—	
Cobalt	7440-48-4	2.80E-08	1.23E-07	1.23E-07	—		Cobalt	7440-48-4	—	—	—	—		Cobalt	7440-48-4	—	—	—	—		Cobalt	7440-48-4	—	—	—	—		Cobalt	7440-48-4	—	—	—	—		Cobalt	7440-48-4	—	—	—	—	
Dichlorobenzene	25321-22-6	4.00E-07	1.75E-06	1.75E-06	—		Dichlorobenzene	25321-22-6	—	—	—	—		Dichlorobenzene	25321-22-6	—	—	—	—		Dichlorobenzene	25321-22-6	—	—	—	—		Dichlorobenzene	25321-22-6	—	—	—	—		Dichlorobenzene	25321-22-6	—	—	—	—	
Ethyl Benzene	100-41-4	—	—	—	—		Ethyl Benzene	100-41-4	—	—	—	—		Ethyl Benzene	100-41-4	—	—	—	—		Ethyl Benzene	100-41-4	—	—	—	—		Ethyl Benzene	100-41-4	—	—	—	—		Ethyl Benzene	100-41-4	—	—	—	—	
Formaldehyde	50-00-0	2.03E-03	1.15E-04	1.15E-04	—		Formaldehyde	50-00-0	—	—	—	—		Formaldehyde	50-00-0	—	—	—	—		Formaldehyde	50-00-0	—	—	—	—		Formaldehyde	50-00-0	—	—	—	—		Formaldehyde	50-00-0	—	—	—	—	
Hexachlorobutadiene	87-68-3	—	—	—	—		Hexachlorobutadiene	87-68-3	—	—	—	—		Hexachlorobutadiene	87-68-3	—	—	—	—		Hexachlorobutadiene	87-68-3	—	—	—	—		Hexachlorobutadiene	87-68-3	—	—	—	—		Hexachlorobutadiene	87-68-3	—	—	—	—	
Hexane	110-54-3	8.00E-04	2.83E-03	2.83E-03	—		Hexane	110-54-3	—	—	—	—		Hexane	110-54-3	—	—	—	—		Hexane	110-54-3	—	—	—	—		Hexane	110-54-3	—	—	—	—		Hexane	110-54-3	—	—	—	—	
Manganese	7439-96-5	1.27E-07	5.55E-07	5.55E-07	—		Manganese	7439-96-5	—	—	—	—		Manganese	7439-96-5	—	—	—	—		Manganese	7439-96-5	—	—	—	—		Manganese	7439-96-5	—	—	—	—		Manganese	7439-96-5	—	—	—	—	
Mercury	7439-97-6	8.67E-08	3.80E-07	3.80E-07	—		Mercury	7439-97-6	—	—	—	—		Mercury	7439-97-6	—	—	—	—		Mercury	7439-97-6	—	—	—	—		Mercury	7439-97-6	—	—	—	—		Mercury	7439-97-6	—	—	—	—	
Methylene Chloride	75-09-02	—	—	—	—		Methylene Chloride	75-09-02	—	—	—	—		Methylene Chloride	75-09-02	—	—	—	—		Methylene Chloride	75-09-02	—	—	—	—		Methylene Chloride	75-09-02	—	—	—	—		Methylene Chloride	75-09-02	—	—	—	—	
Methyl tert-butyl ether	1634-04-4	—	—	—	—		Methyl tert-butyl ether	1634-04-4	—	—	—	—		Methyl tert-butyl ether	1634-04-4	—	—	—	—		Methyl tert-butyl ether	1634-04-4	—	—	—	—		Methyl tert-butyl ether	1634-04-4	—	—	—	—		Methyl tert-butyl ether	1634-04-4	—	—	—	—	
Naphthalene	91-20-3	3.03E-07	8.91E-07	8.91E-07	—		Naphthalene	91-20-3	—	—	—	—		Naphthalene	91-20-3	—	—	—	—		Naphthalene	91-20-3	—	—	—	—		Naphthalene	91-20-3	—	—	—	—		Naphthalene	91-20-3	—	—	—	—	
Nickel	7440-02-0	7.00E-07	3.07E-06	3.07E-06	—		Nickel	7440-02-0	—	—	—	—		Nickel	7440-02-0	—	—	—	—		Nickel	7440-02-0	—	—	—	—		Nickel	7440-02-0	—	—	—	—		Nickel	7440-02-0	—	—	—	—	
PAH (not including Naphthalene)		—	—	—	—		PAH (not including Naphthalene)		—	—	—	—		PAH (not including Naphthalene)		—	—	—	—		PAH (not including Naphthalene)		—	—	—	—		PAH (not including Naphthalene)		—	—	—	—		PAH (not including Naphthalene)		—	—	—	—	
POM		2.94E-08	1.29E-07	1.29E-07	—		POM		—	—	—	—		POM		—	—	—	—		POM		—	—	—	—		POM		—	—	—	—		POM		—	—	—	—	
Propylene	115-07-1	—	—	—	—		Propylene	115-07-1	—	—	—	—		Propylene	115-07-1	—	—	—	—		Propylene	115-07-1	—	—	—	—		Propylene	115-07-1	—	—	—	—		Propylene	115-07-1	—	—	—	—	
Selenium	7782-49-2	8.00E-09	3.50E-08	3.50E-08	—		Selenium	7782-49-2	—	—	—	—		Selenium	7782-49-2	—	—	—	—		Selenium	7782-49-2	—	—	—	—		Selenium	7782-49-2	—	—	—	—		Selenium	7782-49-2	—	—	—	—	
Styrene	100-42-5	—	—	—	—		Styrene	100-42-5	—	—	—	—		Styrene	100-42-5	—	—	—	—		Styrene	100-42-5	—	—	—	—		Styrene	100-42-5	—	—	—	—		Styrene	100-42-5	—	—	—	—	
Tetrachloroethene	127-18-4	—	—	—	—		Tetrachloroethene	127-18-4	—	—	—	—		Tetrachloroethene	127-18-4	—	—	—	—		Tetrachloroethene	127-18-4	—	—	—	—		Tetrachloroethene	127-18-4	—	—	—	—		Tetrachloroethene	127-18-4	—	—	—	—	
Toluene	108-88-3	1.13E-06	4.96E-06	4.96E-06	—		Toluene	108-88-3	—	—	—	—		Toluene	108-88-3	—	—	—	—		Toluene	108-88-3	—	—	—	—		Toluene	108-88-3	—	—	—	—		Toluene	108-88-3	—	—	—	—	
Trichloroethene	79-01-6	—	—	—	—		Trichloroethene	79-01-6	—	—	—	—		Trichloroethene	79-01-6	—	—	—	—		Trichloroethene	79-01-6	—	—	—	—		Trichloroethene	79-01-6	—	—	—	—		Trichloroethene	79-01-6	—	—	—	—	
Vinyl Acetate	108-05-4	—	—	—	—		Vinyl Acetate	108-05-4	—	—	—	—		Vinyl Acetate	108-05-4	—	—	—	—		Vinyl Acetate	108-05-4	—	—	—	—		Vinyl Acetate	108-05-4	—	—	—	—		Vinyl Acetate	108-05-4	—	—	—	—	
Vinyl Chloride	75-01-4	—	—	—	—		Vinyl Chloride	75-01-4	—	—	—	—		Vinyl Chloride	75-01-4	—	—	—	—		Vinyl Chloride	75-01-4	—	—	—	—		Vinyl Chloride	75-01-4	—	—	—	—		Vinyl Chloride	75-01-4	—	—	—	—	
Xylenes	1330-20-7	—	—	—	—		Xylenes	1330-20-7	—	—	—	—		Xylenes	1330-20-7	—	—	—	—		Xylenes	1330-20-7	—	—	—	—		Xylenes	1330-20-7	—	—	—	—		Xylenes	1330-20-7	—	—	—	—	
Total HAPs	NA	6.29E-04	2.76E-03	2.76E-03	—		Total HAPs	NA	—	—	—	—		Total HAPs	NA	7.12E-05	0.02	3.12E-04	—		Total HAPs	NA	2.16E-04	0.03	9.26E-04	—		Total HAPs	NA	9.83E-05	0.03	4.31E-04	—		Total HAPs	NA	1.23E-04	0.01	5.37E-04	—	

Alternate Format

GI-07 Spreadsheet

Facility Emmison Summary
Air Quality Permit Program
Doc Type: Permit Application

3a) Delta ID No.:							3a) Delta ID No.:							3a) Delta ID No.:					
3b) Tempo SI ID No.:		EQUI125					3b) Tempo SI ID No.:		EQUI126					3b) Tempo SI ID No.:		EQUI127			
Description:		SC15					Description:		DC21					Description:		DC08			
3c)	3d)	3e) Potential				3f)	3c)	3d)	3e) Potential				3f)	3c)	3d)	3e) Potential				3f)
Pollutant Name	CAS #	Lbs per Hr	Lbs/ Dy	Limited tpy	Actual tpy		Pollutant Name	CAS #	Lbs per Hr	Lbs/ tpy	Limited tpy	Actual tpy		Pollutant Name	CAS #	Lbs per Hr	Lbs/ tpy	Limited tpy	Actual tpy
PM	NA	9.09E-02	2.66	0.04	---		PM	NA	0.02	3.87	0.09	---		PM	NA	4.48E-03	2.47	0.02	---
PM10	NA	9.09E-03	2.66	0.04	---		PM10	NA	0.02	3.87	0.09	---		PM10	NA	4.48E-03	2.47	0.02	---
PM2.5	NA	9.09E-03	2.66	0.04	---		PM2.5	NA	0.02	3.87	0.09	---		PM2.5	NA	4.48E-03	2.47	0.02	---
SO2	NA	---	---	---	---		SO2	NA	---	---	---	---		SO2	NA	---	---	---	---
NOx	NA	---	---	---	---		NOx	NA	---	---	---	---		NOx	NA	---	---	---	---
CO	NA	---	---	---	---		CO	NA	---	---	---	---		CO	NA	---	---	---	---
VOC	NA	---	---	---	---		VOC	NA	---	---	---	---		VOC	NA	---	---	---	---
Lead	NA	5.73E-05	0.03	2.51E-04	---		Lead	NA	1.30E-04	0.04	5.70E-04	---		Lead	NA	3.17E-05	0.03	1.39E-04	---
CO2	NA	---	---	---	---		CO2	NA	---	---	---	---		CO2	NA	---	---	---	---
CH4	NA	---	---	---	---		CH4	NA	---	---	---	---		CH4	NA	---	---	---	---
N2O	NA	---	---	---	---		N2O	NA	---	---	---	---		N2O	NA	---	---	---	---
Total GHG (CO2e)	NA	---	---	---	---		Total GHG (CO2e)	NA	---	---	---	---		Total GHG (CO2e)	NA	---	---	---	---
1,1,1-Trichloroethane	71-55-6	---	---	---	---		1,1,1-Trichloroethane	71-55-6	---	---	---	---		1,1,1-Trichloroethane	71-55-6	---	---	---	---
1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---		1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---		1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---
1,1,2-Trichloroethane	79-00-5	---	---	---	---		1,1,2-Trichloroethane	79-00-5	---	---	---	---		1,1,2-Trichloroethane	79-00-5	---	---	---	---
1,1-Dichloroethane	75-34-3	---	---	---	---		1,1-Dichloroethane	75-34-3	---	---	---	---		1,1-Dichloroethane	75-34-3	---	---	---	---
1,1-Dichloroethene	75-35-4	---	---	---	---		1,1-Dichloroethene	75-35-4	---	---	---	---		1,1-Dichloroethene	75-35-4	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	---	---	---	---		1,2,4-Trichlorobenzene	120-82-1	---	---	---	---		1,2,4-Trichlorobenzene	120-82-1	---	---	---	---
1,2-Dibromoethane	106-93-4	---	---	---	---		1,2-Dibromoethane	106-93-4	---	---	---	---		1,2-Dibromoethane	106-93-4	---	---	---	---
1,2-Dichloroethane	107-06-2	---	---	---	---		1,2-Dichloroethane	107-06-2	---	---	---	---		1,2-Dichloroethane	107-06-2	---	---	---	---
1,2-Dichloropropane	78-87-5	---	---	---	---		1,2-Dichloropropane	78-87-5	---	---	---	---		1,2-Dichloropropane	78-87-5	---	---	---	---
1,4-Dichlorobenzene	106-46-7	---	---	---	---		1,4-Dichlorobenzene	106-46-7	---	---	---	---		1,4-Dichlorobenzene	106-46-7	---	---	---	---
4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---		4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---		4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---
Acetaldehyde	75070	---	---	---	---		Acetaldehyde	75070	---	---	---	---		Acetaldehyde	75070	---	---	---	---
1,3-Butadiene	106990	---	---	---	---		1,3-Butadiene	106990	---	---	---	---		1,3-Butadiene	106990	---	---	---	---
Arsenic	7440-38-2	---	---	---	---		Arsenic	7440-38-2	---	---	---	---		Arsenic	7440-38-2	---	---	---	---
Benzene	71-43-2	---	---	---	---		Benzene	71-43-2	---	---	---	---		Benzene	71-43-2	---	---	---	---
Benzyl chloride	100-44-7	---	---	---	---		Benzyl chloride	100-44-7	---	---	---	---		Benzyl chloride	100-44-7	---	---	---	---
Bromoform	75-25-2	---	---	---	---		Bromoform	75-25-2	---	---	---	---		Bromoform	75-25-2	---	---	---	---
Bromomethane	74-83-9	---	---	---	---		Bromomethane	74-83-9	---	---	---	---		Bromomethane	74-83-9	---	---	---	---
Beryllium	7440-41-7	---	---	---	---		Beryllium	7440-41-7	---	---	---	---		Beryllium	7440-41-7	---	---	---	---
Cadmium	7440-43-9	---	---	---	---		Cadmium	7440-43-9	---	---	---	---		Cadmium	7440-43-9	---	---	---	---
Carbon disulfide	75-15-0	---	---	---	---		Carbon disulfide	75-15-0	---	---	---	---		Carbon disulfide	75-15-0	---	---	---	---
Carbon tetrachloride	56-23-5	---	---	---	---		Carbon tetrachloride	56-23-5	---	---	---	---		Carbon tetrachloride	56-23-5	---	---	---	---
Chromium	7440-47-3	---	---	---	---		Chromium	7440-47-3	---	---	---	---		Chromium	7440-47-3	---	---	---	---
Chlorobenzene	108-90-7	---	---	---	---		Chlorobenzene	108-90-7	---	---	---	---		Chlorobenzene	108-90-7	---	---	---	---
Chloroethane	75-00-3	---	---	---	---		Chloroethane	75-00-3	---	---	---	---		Chloroethane	75-00-3	---	---	---	---
Chloroform	67-66-3	---	---	---	---		Chloroform	67-66-3	---	---	---	---		Chloroform	67-66-3	---	---	---	---
Chloromethane	74-87-2	---	---	---	---		Chloromethane	74-87-2	---	---	---	---		Chloromethane	74-87-2	---	---	---	---
Cobalt	7440-48-4	---	---	---	---		Cobalt	7440-48-4	---	---	---	---		Cobalt	7440-48-4	---	---	---	---
Dichlorobenzene	25321-22-6	---	---	---	---		Dichlorobenzene	25321-22-6	---	---	---	---		Dichlorobenzene	25321-22-6	---	---	---	---
Ethyl Benzene	100-41-4	---	---	---	---		Ethyl Benzene	100-41-4	---	---	---	---		Ethyl Benzene	100-41-4	---	---	---	---
Formaldehyde	50-00-0	---	---	---	---		Formaldehyde	50-00-0	---	---	---	---		Formaldehyde	50-00-0	---	---	---	---
Hexachlorobutadiene	87-68-3	---	---	---	---		Hexachlorobutadiene	87-68-3	---	---	---	---		Hexachlorobutadiene	87-68-3	---	---	---	---
Hexane	110-54-3	---	---	---	---		Hexane	110-54-3	---	---	---	---		Hexane	110-54-3	---	---	---	---
Manganese	7439-96-5	---	---	---	---		Manganese	7439-96-5	---	---	---	---		Manganese	7439-96-5	---	---	---	---
Mercury	7439-97-6	---	---	---	---		Mercury	7439-97-6	---	---	---	---		Mercury	7439-97-6	---	---	---	---
Methylene Chloride	75-09-02	---	---	---	---		Methylene Chloride	75-09-02	---	---	---	---		Methylene Chloride	75-09-02	---	---	---	---
Methyl tert-butyl ether	1634-04-4	---	---	---	---		Methyl tert-butyl ether	1634-04-4	---	---	---	---		Methyl tert-butyl ether	1634-04-4	---	---	---	---
Naphthalene	91-20-3	---	---	---	---		Naphthalene	91-20-3	---	---	---	---		Naphthalene	91-20-3	---	---	---	---
Nickel	7440-02-0	---	---	---	---		Nickel	7440-02-0	---	---	---	---		Nickel	7440-02-0	---	---	---	---
PAH (not including Naphthalene)		---	---	---	---		PAH (not including Naphthalene)		---	---	---	---		PAH (not including Naphthalene)		---	---	---	---
POM		---	---	---	---		POM		---	---	---	---		POM		---	---	---	---
Propylene	115-07-1	---	---	---	---		Propylene	115-07-1	---	---	---	---		Propylene	115-07-1	---	---	---	---
Selenium	7782-49-2	---	---	---	---		Selenium	7782-49-2	---	---	---	---		Selenium	7782-49-2	---	---	---	---
Styrene	100-42-5	---	---	---	---		Styrene	100-42-5	---	---	---	---		Styrene	100-42-5	---	---	---	---
Tetrachloroethane	127-18-4	---	---	---	---		Tetrachloroethene	127-18-4	---	---	---	---		Tetrachloroethene	127-18-4	---	---	---	---
Toluene	108-88-3	---	---	---	---		Toluene	108-88-3	---	---	---	---		Toluene	108-88-3	---	---	---	---
Trichloroethene	79-01-6	---	---	---	---		Trichloroethene	79-01-6	---	---	---	---		Trichloroethene	79-01-6	---	---	---	---
Vinyl Acetate	108-05-4	---	---	---	---		Vinyl Acetate	108-05-4	---	---	---	---		Vinyl Acetate	108-05-4	---	---	---	---
Vinyl Chloride	75-01-4	---	---	---	---		Vinyl Chloride	75-01-4	---	---	---	---		Vinyl Chloride	75-01-4	---	---	---	---
Xylenes	1330-20-7	---	---	---	---		Xylenes	1330-20-7	---	---	---	---		Xylenes	1330-20-7	---	---	---	---
Total HAPs	NA	5.73E-05	0.03	2.51E-04	---		Total HAPs	NA	1.30E-04	0.04	5.70E-04	---		Total HAPs	NA	3.17E-05	0.03	1.39E-04	---

Alternate Format

GI-07 Spreadsheet

Facility Emmison Summary

Air Quality Permit Program

Doc Type: Permit Application

[1a] Delta ID No.:		EQUI129				[1a] Delta ID No.:		EQUI129				[1a] Delta ID No.:		EQUI130				[1a] Delta ID No.:		EQUI131				[1a] Delta ID No.:		EQUI132				[1a] Delta ID No.:		EQUI133			
[1b] Tempo SI ID No.:		EQUI129				[1b] Tempo SI ID No.:		EQUI129				[1b] Tempo SI ID No.:		EQUI130				[1b] Tempo SI ID No.:		EQUI131				[1b] Tempo SI ID No.:		EQUI132				[1b] Tempo SI ID No.:		EQUI133			
Description		DC10				Description		DC17				Description		DC18				Description		DC36				Description		DC37				Description		DC35			
[1c] Pollutant Name	[1d] CAS #	[1e] Potential Uncontrolled tpy			[1f] Actual tpy	[1c] Pollutant Name	[1d] CAS #	[1e] Potential Uncontrolled tpy			[1f] Actual tpy	[1c] Pollutant Name	[1d] CAS #	[1e] Potential Uncontrolled tpy			[1f] Actual tpy	[1c] Pollutant Name	[1d] CAS #	[1e] Potential Uncontrolled tpy			[1f] Actual tpy	[1c] Pollutant Name	[1d] CAS #	[1e] Potential Uncontrolled tpy			[1f] Actual tpy	[1c] Pollutant Name	[1d] CAS #	[1e] Potential Uncontrolled tpy			[1f] Actual tpy
		Uncontrolled tpy	Limited by tpy					Uncontrolled tpy	Limited by tpy					Uncontrolled tpy	Limited by tpy					Uncontrolled tpy	Limited by tpy					Uncontrolled tpy	Limited by tpy					Uncontrolled tpy	Limited by tpy		
PM	NA	0.01	2.17	0.09	—	PM	NA	7.64E-03	2.17	0.03	—	PM	NA	7.07E-03	1.09	0.03	—	PM	NA	0.02	9.36	0.10	—	PM	NA	0.02	4.28	0.09	—	PM	NA	0.01	3.71	0.06	—
PM10	NA	0.01	2.17	0.09	—	PM10	NA	7.64E-03	2.17	0.03	—	PM10	NA	7.07E-03	1.09	0.03	—	PM10	NA	0.02	9.36	0.10	—	PM10	NA	0.02	4.28	0.09	—	PM10	NA	0.01	3.71	0.06	—
PM2.5	NA	0.01	2.17	0.09	—	PM2.5	NA	7.64E-03	2.17	0.03	—	PM2.5	NA	7.07E-03	1.09	0.03	—	PM2.5	NA	0.02	9.36	0.10	—	PM2.5	NA	0.02	4.28	0.09	—	PM2.5	NA	0.01	3.71	0.06	—
SO2	NA	—	—	—	—	SO2	NA	—	—	—	—	SO2	NA	—	—	—	—	SO2	NA	—	—	—	—	SO2	NA	—	—	—	—	SO2	NA	—	—	—	—
NOx	NA	—	—	—	—	NOx	NA	—	—	—	—	NOx	NA	—	—	—	—	NOx	NA	—	—	—	—	NOx	NA	—	—	—	—	NOx	NA	—	—	—	—
CO	NA	—	—	—	—	CO	NA	—	—	—	—	CO	NA	—	—	—	—	CO	NA	—	—	—	—	CO	NA	—	—	—	—	CO	NA	—	—	—	—
VOC	NA	—	—	—	—	VOC	NA	—	—	—	—	VOC	NA	—	—	—	—	VOC	NA	—	—	—	—	VOC	NA	—	—	—	—	VOC	NA	—	—	—	—
Lead	NA	9.79E-05	0.02	4.29E-04	—	Lead	NA	5.41E-05	0.02	2.37E-04	—	Lead	NA	5.01E-05	0.01	2.19E-04	—	Lead	NA	1.55E-04	0.07	6.81E-04	—	Lead	NA	1.35E-04	0.05	5.93E-04	—	Lead	NA	1.13E-04	0.04	4.95E-04	—
CO2	NA	—	—	—	—	CO2	NA	—	—	—	—	CO2	NA	—	—	—	—	CO2	NA	—	—	—	—	CO2	NA	—	—	—	—	CO2	NA	—	—	—	—
CH4	NA	—	—	—	—	CH4	NA	—	—	—	—	CH4	NA	—	—	—	—	CH4	NA	—	—	—	—	CH4	NA	—	—	—	—	CH4	NA	—	—	—	—
N2O	NA	—	—	—	—	N2O	NA	—	—	—	—	N2O	NA	—	—	—	—	N2O	NA	—	—	—	—	N2O	NA	—	—	—	—	N2O	NA	—	—	—	—
Total GHG (CO2e)	NA	—	—	—	—	Total GHG (CO2e)	NA	—	—	—	—	Total GHG (CO2e)	NA	—	—	—	—	Total GHG (CO2e)	NA	—	—	—	—	Total GHG (CO2e)	NA	—	—	—	—	Total GHG (CO2e)	NA	—	—	—	—
1,1,1-Trichloroethane	71-55-6	—	—	—	—	1,1,1-Trichloroethane	71-55-6	—	—	—	—	1,1,1-Trichloroethane	71-55-6	—	—	—	—	1,1,1-Trichloroethane	71-55-6	—	—	—	—	1,1,1-Trichloroethane	71-55-6	—	—	—	—	1,1,1-Trichloroethane	71-55-6	—	—	—	—
1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—	1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—	1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—	1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—	1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—	1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—
1,1,2-Trichloroethane	79-00-5	—	—	—	—	1,1,2-Trichloroethane	79-00-5	—	—	—	—	1,1,2-Trichloroethane	79-00-5	—	—	—	—	1,1,2-Trichloroethane	79-00-5	—	—	—	—	1,1,2-Trichloroethane	79-00-5	—	—	—	—	1,1,2-Trichloroethane	79-00-5	—	—	—	—
1,1-Dichloroethane	75-34-3	—	—	—	—	1,1-Dichloroethane	75-34-3	—	—	—	—	1,1-Dichloroethane	75-34-3	—	—	—	—	1,1-Dichloroethane	75-34-3	—	—	—	—	1,1-Dichloroethane	75-34-3	—	—	—	—	1,1-Dichloroethane	75-34-3	—	—	—	—
1,1-Dichloroethene	75-35-4	—	—	—	—	1,1-Dichloroethene	75-35-4	—	—	—	—	1,1-Dichloroethene	75-35-4	—	—	—	—	1,1-Dichloroethene	75-35-4	—	—	—	—	1,1-Dichloroethene	75-35-4	—	—	—	—	1,1-Dichloroethene	75-35-4	—	—	—	—
1,2,4-Trichlorobenzene	120-82-1	—	—	—	—	1,2,4-Trichlorobenzene	120-82-1	—	—	—	—	1,2,4-Trichlorobenzene	120-82-1	—	—	—	—	1,2,4-Trichlorobenzene	120-82-1	—	—	—	—	1,2,4-Trichlorobenzene	120-82-1	—	—	—	—	1,2,4-Trichlorobenzene	120-82-1	—	—	—	—
1,2-Dibromoethane	106-93-4	—	—	—	—	1,2-Dibromoethane	106-93-4	—	—	—	—	1,2-Dibromoethane	106-93-4	—	—	—	—	1,2-Dibromoethane	106-93-4	—	—	—	—	1,2-Dibromoethane	106-93-4	—	—	—	—	1,2-Dibromoethane	106-93-4	—	—	—	—
1,2-Dichloroethane	107-06-2	—	—	—	—	1,2-Dichloroethane	107-06-2	—	—	—	—	1,2-Dichloroethane	107-06-2	—	—	—	—	1,2-Dichloroethane	107-06-2	—	—	—	—	1,2-Dichloroethane	107-06-2	—	—	—	—	1,2-Dichloroethane	107-06-2	—	—	—	—
1,2-Dichloropropane	78-87-5	—	—	—	—	1,2-Dichloropropane	78-87-5	—	—	—	—	1,2-Dichloropropane	78-87-5	—	—	—	—	1,2-Dichloropropane	78-87-5	—	—	—	—	1,2-Dichloropropane	78-87-5	—	—	—	—	1,2-Dichloropropane	78-87-5	—	—	—	—
1,4-Dichlorobenzene	106-46-7	—	—	—	—	1,4-Dichlorobenzene	106-46-7	—	—	—	—	1,4-Dichlorobenzene	106-46-7	—	—	—	—	1,4-Dichlorobenzene	106-46-7	—	—	—	—	1,4-Dichlorobenzene	106-69-7	—	—	—	—	1,4-Dichlorobenzene	106-46-7	—	—	—	—
4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—	4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—	4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—	4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—	4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—	4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—
Acetaldehyde	75070	—	—	—	—	Acetaldehyde	75070	—	—	—	—	Acetaldehyde	75070	—	—	—	—	Acetaldehyde	75070	—	—	—	—	Acetaldehyde	75070	—	—	—	—	Acetaldehyde	75070	—	—	—	—
1,3-Butadiene	106990	—	—	—	—	1,3-Butadiene	106990	—	—	—	—	1,3-Butadiene	106990	—	—	—	—	1,3-Butadiene	106990	—	—	—	—	1,3-Butadiene	106990	—	—	—	—	1,3-Butadiene	106990	—	—	—	—
Arsenic	7440-38-2	—	—	—	—	Arsenic	7440-38-2	—	—	—	—	Arsenic	7440-38-2	—	—	—	—	Arsenic	7440-38-2	—	—	—	—	Arsenic	7440-38-2	—	—	—	—	Arsenic	7440-38-2	—	—	—	—
Benzene	71-43-2	—	—	—	—	Benzene	71-43-2	—	—	—	—	Benzene	71-43-2	—	—	—	—	Benzene	71-43-2	—	—	—	—	Benzene	71-43-2	—	—	—	—	Benzene	71-43-2	—	—	—	—
Benzyl chloride	100-44-7	—	—	—	—	Benzyl chloride	100-44-7	—	—	—	—	Benzyl chloride	100-44-7	—	—	—	—	Benzyl chloride	100-44-7	—	—	—	—	Benzyl chloride	100-44-7	—	—	—	—	Benzyl chloride	100-44-7	—	—	—	—
Biomchloro	75-09-2	—	—	—	—	Biomchloro	75-09-2	—	—	—	—	Biomchloro	75-09-2	—	—	—	—	Biomchloro	75-09-2	—	—	—	—	Biomchloro	75-09-2	—	—	—	—	Biomchloro	75-09-2	—	—	—	—
Bromomethane	74-83-9	—	—	—	—	Bromomethane	74-83-9	—	—	—	—	Bromomethane	74-83-9	—	—	—	—	Bromomethane	74-83-9	—	—	—	—	Bromomethane	74-83-9	—	—	—	—	Bromomethane	74-83-9	—	—	—	—
Beryllium	7440-41-7	—	—	—	—	Beryllium	7440-41-7	—	—	—	—	Beryllium	7440-41-7	—	—	—	—	Beryllium	7440-41-7	—	—	—	—	Beryllium	7440-41-7	—	—	—	—	Beryllium	7440-41-7	—	—	—	—
Cadmium	7440-43-9	—	—	—	—	Cadmium	7440-43-9	—	—	—	—	Cadmium	7440-43-9	—	—	—	—	Cadmium	7440-43-9	—	—	—	—	Cadmium	7440-43-9	—	—	—	—	Cadmium	7440-43-9	—	—	—	—
Carbon disulfide	75-15-0	—	—	—	—	Carbon disulfide	75-15-0	—	—	—	—	Carbon disulfide	75-15-0	—	—	—	—	Carbon disulfide	75-15-0	—	—	—	—	Carbon disulfide	75-15-0	—	—	—	—	Carbon disulfide	75-15-0	—	—	—	—
Carbon tetrachloride	56-23-5	—	—	—	—	Carbon tetrachloride	56-23-5	—	—	—	—	Carbon tetrachloride	56-23-5	—	—	—	—	Carbon tetrachloride	56-23-5	—	—	—	—	Carbon tetrachloride	56-23-5	—	—	—	—	Carbon tetrachloride	56-23-5	—	—	—	—
Chromium	7440-47-3	—	—	—	—	Chromium	7440-47-3	—	—	—	—	Chromium	7440-47-3	—	—	—	—	Chromium	7440-47-3	—	—	—	—	Chromium	7440-47-3	—	—	—	—	Chromium	7440-47-3	—	—	—	—
Chlorobenzene	108-90-7	—	—	—	—	Chlorobenzene	108-90-7	—	—	—	—	Chlorobenzene	108-90-7	—	—	—	—	Chlorobenzene	108-90-7	—	—	—	—	Chlorobenzene	108-90-7	—	—	—	—	Chlorobenzene	108-90-7	—	—	—	—
Chloroethane	75-00-3	—	—	—	—	Chloroethane	75-00-3	—	—	—	—	Chloroethane	75-00-3	—	—	—	—	Chloroethane	75-00-3	—	—	—	—	Chloroethane	75-00-3	—	—	—	—	Chloroethane	75-00-3	—	—	—	—
Chloroform	67-66-3	—	—	—	—	Chloroform	67-66-3	—	—	—	—	Chloroform	67-66-3	—	—	—	—	Chloroform	67-66-3	—	—	—	—	Chloroform	67-66-3	—	—	—	—	Chloroform	67-66-3	—	—	—	—
Chloromethane	74-87-2	—	—	—	—	Chloromethane	74-87-2	—	—	—	—	Chloromethane	74-87-2	—	—	—	—	Chloromethane	74-87-2	—	—	—	—	Chloromethane	74-87-2	—	—	—	—	Chloromethane	74-87-2	—	—	—	—
Cobalt	7440-48-4	—	—	—	—	Cobalt	7440-48-4	—	—	—	—	Cobalt	7440-48-4	—	—	—	—	Cobalt	7440-48-4	—	—	—	—	Cobalt	7440-48-4	—	—	—	—	Cobalt	7440-48-4	—	—	—	—
Dichlorobenzene	25321-22-6	—	—	—	—	Dichlorobenzene	25321-22-6	—	—	—	—	Dichlorobenzene	25321-22-6	—	—	—	—	Dichlorobenzene	25321-22-6	—	—	—	—	Dichlorobenzene	25321-22-6	—	—	—	—	Dichlorobenzene	25321-22-6	—	—	—	—
Ethyl Benzene	100-41-4	—	—	—	—	Ethyl Benzene	100-41-4	—	—	—	—	Ethyl Benzene	100-41-4	—	—	—	—	Ethyl Benzene	100-41-4	—	—	—	—	Ethyl Benzene	100-41-4	—	—	—	—	Ethyl Benzene	100-41-4	—	—	—	—
Formaldehyde	50-00-0	—	—	—	—	Formaldehyde	50-00-0	—	—	—	—	Formaldehyde	50-00-0	—	—	—	—	Formaldehyde	50-00-0	—	—	—	—	Formaldehyde	50-00-0	—	—	—	—	Formaldehyde	50-00-0	—	—	—	—
Hexachlorobutadiene	87-68-3	—	—	—	—	Hexachlorobutadiene	87-68-3	—	—	—	—	Hexachlorobutadiene	87-68-3	—	—	—	—	Hexachlorobutadiene	87-68-3	—	—	—	—	Hexachlorobutadiene	87-68-3	—	—	—	—	Hexachlorobutadiene	87-68-3	—	—	—	—
Hexane	110-54-3	—	—	—	—	Hexane	110-54-3	—	—	—	—	Hexane	110-54-3	—	—	—	—	Hexane	110-54-3	—	—	—	—	Hexane	110-54-3	—	—	—	—	Hexane	110-54-3	—	—	—	—
Manganese	7439-96-5	—	—	—	—	Manganese	7439-96-5	—	—	—	—	Manganese	7439-96-5	—	—	—	—	Manganese	7439-96-5	—	—	—	—	Manganese	7439-96-5	—	—	—	—	Manganese	7439-96-5	—	—	—	—
Mercury	7439-97-6	—	—	—	—	Mercury	7439-97-6	—	—	—	—	Mercury	7439-97-6	—	—	—	—	Mercury	7439-97-6	—	—	—	—	Mercury	7439-97-6	—	—	—	—	Mercury	7439-97-6	—	—	—	—
Methylene Chloride	75-09-02	—	—	—	—	Methylene Chloride	75-09-02	—	—	—	—	Methylene Chloride	75-09-02	—	—	—	—	Methylene Chloride	75-09-02	—	—	—	—	Methylene Chloride	75-09-02	—	—	—	—	Methylene Chloride	75-09-02	—	—	—	—
Methyl tert-butyl ether	1634-04-4	—	—	—	—	Methyl tert-butyl ether	1634-04-4	—	—	—	—	Methyl tert-butyl ether	1634-04-4	—	—	—	—	Methyl tert-butyl ether	1634-04-4	—	—	—	—	Methyl tert-butyl ether	1634-04-4	—	—	—	—	Methyl tert-butyl ether	1634-04-4	—	—	—	—
Naphthalene	91-20-3	—	—	—	—	Naphthalene	91-20-3	—	—	—	—	Naphthalene	91-20-3	—	—	—	—	Naphthalene	91-20-3	—	—	—	—	Naphthalene	91-20-3	—	—	—	—	Naphthalene	91-20-3	—	—	—	—
Nickel	7440-02-0	—	—	—	—	Nickel	7440-02-0	—	—	—	—	Nickel	7440-02-0	—	—	—	—	Nickel	7440-02-0	—	—	—	—	Nickel	7440-02-0	—	—	—	—	Nickel	7440-02-0	—	—	—	—
PAH (not including Naphthalene)		—	—	—	—	PAH (not including Naphthalene)		—	—	—	—	PAH (not including Naphthalene)		—	—	—	—	PAH (not including Naphthalene)		—	—	—	—	PAH (not including Naphthalene)		—	—	—	—	PAH (not including Naphthalene)		—	—	—	—
POM		—	—	—	—	POM		—	—	—	—	POM		—	—	—	—	POM		—	—	—	—	POM		—	—	—	—	POM		—	—	—	—
Propylene	115-07-1	—	—	—	—	Propylene	115-07-1	—	—	—	—	Propylene	115-07-1	—	—	—	—	Propylene	115-07-1	—	—	—	—	Propylene	115-07-1	—	—	—	—	Propylene	115-07-1	—	—	—	—
Selenium	7782-49-2	—	—	—	—	Selenium	7782-49-2	—	—	—	—	Selenium	7782-49-2	—	—	—	—	Selenium	7782-49-2	—	—	—	—	Selenium	7782-49-2	—	—	—	—	Selenium	7782-49-2	—	—	—	—
Styrene	100-42-5	—	—	—	—	Styrene	100-42-5	—	—	—	—	Styrene	100-42-5	—	—	—	—	Styrene	100-42-5	—	—	—	—	Styrene	100-42-5	—	—	—	—	Styrene	100-42-5	—	—	—	—
Tetrachloroethene	127-18-4	—	—	—	—	Tetrachloroethene	127-18-4	—	—	—	—	Tetrachloroethene	127-18-4	—	—	—	—	Tetrachloroethene	127-18-4	—	—	—	—	Tetrachloroethene	127-18-4	—	—	—	—	Tetrachloroethene	127-18-4	—	—	—	—
Toluene	108-88-3	—	—	—	—	Toluene	108-88-3	—	—	—	—	Toluene	108-88-3	—	—	—	—	Toluene	108-88-3	—	—	—	—	Toluene	108-88-3	—	—	—	—	Toluene	108-88-3	—	—	—	—
Trichloroethene	79-01-6	—	—	—	—	Trichloroethene	79-01-6	—	—	—	—	Trichloroethene	79-01-6	—	—	—	—	Trichloroethene	79-01-6	—	—	—	—	Trichloroethene	79-01-6	—	—	—	—	Trichloroethene	79-01-6	—	—	—	—
Vinyl Acetate	108-05-4	—	—	—	—	Vinyl Acetate	108-05-4	—	—	—	—	Vinyl Acetate	108-05-4	—	—	—	—	Vinyl Acetate	108-05-4	—	—	—	—	Vinyl Acetate	108-05-4	—	—	—	—	Vinyl Acetate	108-05-4	—	—	—	—
Vinyl Chloride	75-01-4	—	—	—	—	Vinyl Chloride	75-01-4	—	—	—	—	Vinyl Chloride	75-01-4	—	—	—	—	Vinyl Chloride	75-01-4	—	—	—	—	Vinyl Chloride	75-01-4	—	—	—	—	Vinyl Chloride	75-01-4	—	—	—	—
Xylenes	1330-20-7	—	—	—	—	Xylenes	1330-20-7	—	—	—	—	Xylenes	1330-20-7	—	—	—	—	Xylenes	1330-20-7	—	—	—	—	Xylenes	1330-20-7	—	—	—	—	Xylenes	1330-20-7	—	—	—	—
Total HAPs	NA	9.79E-05	0.02	4.29E-04	—	Total HAPs	NA	5.41E-05	0.02	2.37E-04	—	Total HAPs	NA	5.01E-05	0.01	2.19E-04	—	Total HAPs	NA	1.55E-04	0.07	6.81E-04	—	Total HAPs	NA	1.35E-04	0.05	5.93E-04	—	Total HAPs	NA	1.13E-04	0.04	4.95E-04	—

Alternate Format

GI-07 Spreadsheet

Facility Emmison Summary

Air Quality Permit Program

Doc Type: Permit Application

(4a) Delta ID No.:						(4a) Delta ID No.:						(4a) Delta ID No.:						(4a) Delta ID No.:						(4a) Delta ID No.:					
(4b) Tempo SI ID No.:		EQUI134				(4b) Tempo SI ID No.:		EQUI135				(4b) Tempo SI ID No.:		EQUI136				(4b) Tempo SI ID No.:		EQUI137				(4b) Tempo SI ID No.:		EQUI138			
Description:		DC22				Description:		DC35				Description:		DC32				Description:		DC26				Description:		DC27			
(4c)	(4d)	(4e) Potential			(4f)	(4c)	(4d)	(4e) Potential			(4f)	(4c)	(4d)	(4e) Potential			(4f)	(4c)	(4d)	(4e) Potential			(4f)	(4c)	(4d)	(4e) Potential			(4f)
Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy	Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy	Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy	Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy	Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy
PM	NA	0.02	3.99	0.07	—	PM	NA	0.03	10.98	0.14	—	PM	NA	0.03	5.43	0.14	—	PM	NA	0.01	3.16	0.05	—	PM	NA	0.02	4.09	0.08	—
PM10	NA	0.02	3.99	0.07	—	PM10	NA	0.03	10.98	0.14	—	PM10	NA	0.03	5.43	0.14	—	PM10	NA	0.01	3.16	0.05	—	PM10	NA	0.02	4.09	0.08	—
PM2.5	NA	0.02	3.99	0.07	—	PM2.5	NA	0.03	10.98	0.14	—	PM2.5	NA	0.03	5.43	0.14	—	PM2.5	NA	0.01	3.16	0.05	—	PM2.5	NA	0.02	4.09	0.08	—
SO2	NA	—	—	—	—	SO2	NA	—	—	—	—	SO2	NA	—	—	—	—	SO2	NA	—	—	—	—	SO2	NA	—	—	—	—
NOx	NA	—	—	—	—	NOx	NA	—	—	—	—	NOx	NA	—	—	—	—	NOx	NA	—	—	—	—	NOx	NA	—	—	—	—
CO	NA	—	—	—	—	CO	NA	—	—	—	—	CO	NA	—	—	—	—	CO	NA	—	—	—	—	CO	NA	—	—	—	—
VOC	NA	—	—	—	—	VOC	NA	—	—	—	—	VOC	NA	—	—	—	—	VOC	NA	—	—	—	—	VOC	NA	—	—	—	—
Lead	NA	1.11E-04	0.04	4.86E-04	—	Lead	NA	2.19E-04	0.12	9.59E-04	—	Lead	NA	2.19E-04	0.06	9.59E-04	—	Lead	NA	8.13E-05	0.03	3.55E-04	—	Lead	NA	1.35E-04	0.05	5.91E-04	—
CO2	NA	—	—	—	—	CO2	NA	—	—	—	—	CO2	NA	—	—	—	—	CO2	NA	—	—	—	—	CO2	NA	—	—	—	—
CH4	NA	—	—	—	—	CH4	NA	—	—	—	—	CH4	NA	—	—	—	—	CH4	NA	—	—	—	—	CH4	NA	—	—	—	—
N2O	NA	—	—	—	—	N2O	NA	—	—	—	—	N2O	NA	—	—	—	—	N2O	NA	—	—	—	—	N2O	NA	—	—	—	—
Total GHG (CO2e)	NA	—	—	—	—	Total GHG (CO2e)	NA	—	—	—	—	Total GHG (CO2e)	NA	—	—	—	—	Total GHG (CO2e)	NA	—	—	—	—	Total GHG (CO2e)	NA	—	—	—	—
1,1,1-Trichloroethane	71-55-6	—	—	—	—	1,1,1-Trichloroethane	71-55-6	—	—	—	—	1,1,1-Trichloroethane	71-55-6	—	—	—	—	1,1,1-Trichloroethane	71-55-6	—	—	—	—	1,1,1-Trichloroethane	71-55-6	—	—	—	—
1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—	1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—	1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—	1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—	1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—
1,1,2-Trichloroethane	79-00-5	—	—	—	—	1,1,2-Trichloroethane	79-00-5	—	—	—	—	1,1,2-Trichloroethane	79-00-5	—	—	—	—	1,1,2-Trichloroethane	79-00-5	—	—	—	—	1,1,2-Trichloroethane	79-00-5	—	—	—	—
1,1-Dichloroethane	75-34-3	—	—	—	—	1,1-Dichloroethane	75-34-3	—	—	—	—	1,1-Dichloroethane	75-34-3	—	—	—	—	1,1-Dichloroethane	75-34-3	—	—	—	—	1,1-Dichloroethane	75-34-3	—	—	—	—
1,1-Dichloroethene	75-35-4	—	—	—	—	1,1-Dichloroethene	75-35-4	—	—	—	—	1,1-Dichloroethene	75-35-4	—	—	—	—	1,1-Dichloroethene	75-35-4	—	—	—	—	1,1-Dichloroethene	75-35-4	—	—	—	—
1,2,4-Trichlorobenzene	120-82-1	—	—	—	—	1,2,4-Trichlorobenzene	120-82-1	—	—	—	—	1,2,4-Trichlorobenzene	120-82-1	—	—	—	—	1,2,4-Trichlorobenzene	120-82-1	—	—	—	—	1,2,4-Trichlorobenzene	120-82-1	—	—	—	—
1,2-Dibromoethane	106-93-4	—	—	—	—	1,2-Dibromoethane	106-93-4	—	—	—	—	1,2-Dibromoethane	106-93-4	—	—	—	—	1,2-Dibromoethane	106-93-4	—	—	—	—	1,2-Dibromoethane	106-93-4	—	—	—	—
1,2-Dichloroethane	107-06-2	—	—	—	—	1,2-Dichloroethane	107-06-2	—	—	—	—	1,2-Dichloroethane	107-06-2	—	—	—	—	1,2-Dichloroethane	107-06-2	—	—	—	—	1,2-Dichloroethane	107-06-2	—	—	—	—
1,2-Dichloropropane	78-87-5	—	—	—	—	1,2-Dichloropropane	78-87-5	—	—	—	—	1,2-Dichloropropane	78-87-5	—	—	—	—	1,2-Dichloropropane	78-87-5	—	—	—	—	1,2-Dichloropropane	78-87-5	—	—	—	—
1,4-Dichlorobenzene	106-46-7	—	—	—	—	1,4-Dichlorobenzene	106-46-7	—	—	—	—	1,4-Dichlorobenzene	106-46-7	—	—	—	—	1,4-Dichlorobenzene	106-46-7	—	—	—	—	1,4-Dichlorobenzene	106-46-7	—	—	—	—
4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—	4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—	4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—	4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—	4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—
Acetaldehyde	75070	—	—	—	—	Acetaldehyde (as HAP) (as	75070	—	—	—	—	Acetaldehyde	75070	—	—	—	—	Acetaldehyde	75070	—	—	—	—	Acetaldehyde	75070	—	—	—	—
1,3-Butadiene	106990	—	—	—	—	1,3-Butadiene	106990	—	—	—	—	1,3-Butadiene	106990	—	—	—	—	1,3-Butadiene	106990	—	—	—	—	1,3-Butadiene	106990	—	—	—	—
Arsenic	7440-38-2	—	—	—	—	Arsenic	7440-38-2	—	—	—	—	Arsenic	7440-38-2	—	—	—	—	Arsenic	7440-38-2	—	—	—	—	Arsenic	7440-38-2	—	—	—	—
Benzene	71-43-2	—	—	—	—	Benzene	71-43-2	—	—	—	—	Benzene	71-43-2	—	—	—	—	Benzene	71-43-2	—	—	—	—	Benzene	71-43-2	—	—	—	—
Benzyl chloride	100-44-7	—	—	—	—	Benzyl chloride	100-44-7	—	—	—	—	Benzyl chloride	100-44-7	—	—	—	—	Benzyl chloride	100-44-7	—	—	—	—	Benzyl chloride	100-44-7	—	—	—	—
Bromoform	75-25-2	—	—	—	—	Bromoform	75-25-2	—	—	—	—	Bromoform	75-25-2	—	—	—	—	Bromoform	75-25-2	—	—	—	—	Bromoform	75-25-2	—	—	—	—
Bromomethane	74-83-9	—	—	—	—	Bromomethane	74-83-9	—	—	—	—	Bromomethane	74-83-9	—	—	—	—	Bromomethane	74-83-9	—	—	—	—	Bromomethane	74-83-9	—	—	—	—
Beryllium	7440-41-7	—	—	—	—	Beryllium	7440-41-7	—	—	—	—	Beryllium	7440-41-7	—	—	—	—	Beryllium	7440-41-7	—	—	—	—	Beryllium	7440-41-7	—	—	—	—
Cadmium	7440-43-9	—	—	—	—	Cadmium	7440-43-9	—	—	—	—	Cadmium	7440-43-9	—	—	—	—	Cadmium	7440-43-9	—	—	—	—	Cadmium	7440-43-9	—	—	—	—
Carbon disulfide	75-15-0	—	—	—	—	Carbon disulfide	75-15-0	—	—	—	—	Carbon disulfide	75-15-0	—	—	—	—	Carbon disulfide	75-15-0	—	—	—	—	Carbon disulfide	75-15-0	—	—	—	—
Carbon tetrachloride	56-23-5	—	—	—	—	Carbon tetrachloride	56-23-5	—	—	—	—	Carbon tetrachloride	56-23-5	—	—	—	—	Carbon tetrachloride	56-23-5	—	—	—	—	Carbon tetrachloride	56-23-5	—	—	—	—
Chromium	7440-47-3	—	—	—	—	Chromium	7440-47-3	—	—	—	—	Chromium	7440-47-3	—	—	—	—	Chromium	7440-47-3	—	—	—	—	Chromium	7440-47-3	—	—	—	—
Chlorobenzene	108-90-7	—	—	—	—	Chlorobenzene	108-90-7	—	—	—	—	Chlorobenzene	108-90-7	—	—	—	—	Chlorobenzene	108-90-7	—	—	—	—	Chlorobenzene	108-90-7	—	—	—	—
Chloroethane	75-00-3	—	—	—	—	Chloroethane	75-00-3	—	—	—	—	Chloroethane	75-00-3	—	—	—	—	Chloroethane	75-00-3	—	—	—	—	Chloroethane	75-00-3	—	—	—	—
Chloroform	67-66-3	—	—	—	—	Chloroform	67-66-3	—	—	—	—	Chloroform	67-66-3	—	—	—	—	Chloroform	67-66-3	—	—	—	—	Chloroform	67-66-3	—	—	—	—
Chloromethane	74-87-3	—	—	—	—	Chloromethane	74-87-3	—	—	—	—	Chloromethane	74-87-3	—	—	—	—	Chloromethane	74-87-3	—	—	—	—	Chloromethane	74-87-3	—	—	—	—
Cobalt	7440-48-4	—	—	—	—	Cobalt	7440-48-4	—	—	—	—	Cobalt	7440-48-4	—	—	—	—	Cobalt	7440-48-4	—	—	—	—	Cobalt	7440-48-4	—	—	—	—
Dichlorobenzene	25321-22-6	—	—	—	—	Dichlorobenzene	25321-22-6	—	—	—	—	Dichlorobenzene	25321-22-6	—	—	—	—	Dichlorobenzene	25321-22-6	—	—	—	—	Dichlorobenzene	25321-22-6	—	—	—	—
Ethyl Benzene	100-41-4	—	—	—	—	Ethyl Benzene	100-41-4	—	—	—	—	Ethyl Benzene	100-41-4	—	—	—	—	Ethyl Benzene	100-41-4	—	—	—	—	Ethyl Benzene	100-41-4	—	—	—	—
Formaldehyde	50-00-0	—	—	—	—	Formaldehyde	50-00-0	—	—	—	—	Formaldehyde	50-00-0	—	—	—	—	Formaldehyde	50-00-0	—	—	—	—	Formaldehyde	50-00-0	—	—	—	—
Hexachlorobutadiene	87-68-3	—	—	—	—	Hexachlorobutadiene	87-68-3	—	—	—	—	Hexachlorobutadiene	87-68-3	—	—	—	—	Hexachlorobutadiene	87-68-3	—	—	—	—	Hexachlorobutadiene	87-68-3	—	—	—	—
Hexane	110-54-3	—	—	—	—	Hexane	110-54-3	—	—	—	—	Hexane	110-54-3	—	—	—	—	Hexane	110-54-3	—	—	—	—	Hexane	110-54-3	—	—	—	—
Manganese	7439-96-5	—	—	—	—	Manganese	7439-96-5	—	—	—	—	Manganese	7439-96-5	—	—	—	—	Manganese	7439-96-5	—	—	—	—	Manganese	7439-96-5	—	—	—	—
Mercury	7439-97-6	—	—	—	—	Mercury	7439-97-6	—	—	—	—	Mercury	7439-97-6	—	—	—	—	Mercury	7439-97-6	—	—	—	—	Mercury	7439-97-6	—	—	—	—
Methylene Chloride	75-09-02	—	—	—	—	Methylene Chloride	75-09-02	—	—	—	—	Methylene Chloride	75-09-02	—	—	—	—	Methylene Chloride	75-09-02	—	—	—	—	Methylene Chloride	75-09-02	—	—	—	—
Methyl tert-butyl ether	1634-04-4	—	—	—	—	Methyl tert-butyl ether	1634-04-4	—	—	—	—	Methyl tert-butyl ether	1634-04-4	—	—	—	—	Methyl tert-butyl ether	1634-04-4	—	—	—	—	Methyl tert-butyl ether	1634-04-4	—	—	—	—
Naphthalene	91-20-3	—	—	—	—	Naphthalene	91-20-3	—	—	—	—	Naphthalene	91-20-3	—	—	—	—	Naphthalene	91-20-3	—	—	—	—	Naphthalene	91-20-3	—	—	—	—
Nickel	7440-02-0	—	—	—	—	Nickel	7440-02-0	—	—	—	—	Nickel	7440-02-0	—	—	—	—	Nickel	7440-02-0	—	—	—	—	Nickel	7440-02-0	—	—	—	—
PAH (not including Naphthalene)		—	—	—	—	PAH (not including Naphthalene)		—	—	—	—	PAH (not including Naphthalene)		—	—	—	—	PAH (not including Naphthalene)		—	—	—	—	PAH (not including Naphthalene)		—	—	—	—
POM		—	—	—	—	POM		—	—	—	—	POM		—	—	—	—	POM		—	—	—	—	POM		—	—	—	—
Propylene	115-07-1	—	—	—	—	Propylene	115-07-1	—	—	—	—	Propylene	115-07-1	—	—	—	—	Propylene	115-07-1	—	—	—	—	Propylene	115-07-1	—	—	—	—
Selenium	7782-49-2	—	—	—	—	Selenium	7782-49-2	—	—	—	—	Selenium	7782-49-2	—	—	—	—	Selenium	7782-49-2	—	—	—	—	Selenium	7782-49-2	—	—	—	—
Styrene	100-42-5	—	—	—	—	Styrene	100-42-5	—	—	—	—	Styrene	100-42-5	—	—	—	—	Styrene	100-42-5	—	—	—	—	Styrene	100-42-5	—	—	—	—
Tetrachloroethene	127-18-4	—	—	—	—	Tetrachloroethene	127-18-4	—	—	—	—	Tetrachloroethene	127-18-4	—	—	—	—	Tetrachloroethene	127-18-4	—	—	—	—	Tetrachloroethene	127-18-4	—	—	—	—
Toluene	108-88-3	—	—	—	—	Toluene	108-88-3	—	—	—	—	Toluene	108-88-3	—	—	—	—	Toluene	108-88-3	—	—	—	—	Toluene	108-88-3	—	—	—	—
Trichloroethene	79-01-6	—	—	—	—	Trichloroethene	79-01-6	—	—	—	—	Trichloroethene	79-01-6	—	—	—	—	Trichloroethene	79-01-6	—	—	—	—	Trichloroethene	79-01-6	—	—	—	—
Vinyl Acetate	108-05-4	—	—	—	—	Vinyl Acetate	108-05-4	—	—	—	—	Vinyl Acetate	108-05-4	—	—	—	—	Vinyl Acetate	108-05-4	—	—	—	—	Vinyl Acetate	108-05-4	—	—	—	—
Vinyl Chloride	75-01-4	—	—	—	—	Vinyl Chloride	75-01-4	—	—	—	—	Vinyl Chloride	75-01-4	—	—	—	—	Vinyl Chloride	75-01-4	—	—	—	—	Vinyl Chloride	75-01-4	—	—	—	—
Xylenes	1330-20-7	—	—	—	—	Xylenes	1330-20-7	—	—	—	—	Xylenes	1330-20-7	—	—	—	—	Xylenes	1330-20-7	—	—	—	—	Xylenes	1330-20-7	—	—	—	—
Total HAPs	NA	1.11E-04	0.04	4.86E-04	—	Total HAPs	NA	2.19E-04	0.12	9.59E-04	—	Total HAPs	NA	2.19E-04	0.06	9.59E-04	—	Total HAPs	NA	8.13E-05	0.03	3.55E-04	—	Total HAPs	NA	1.35E-04	0.05	5.91E-04	—

Alternate Format

GI-07 Spreadsheet

Facility Emmison Summary

Air Quality Permit Program

Doc Type: Permit Application

3a) Delta ID No.:					
3b) Tempo SI ID No.:		EQUI139			
Description		DC16			
3c) Pollutant Name	3d) CAS #	3e) Potential Lbs per Hr	3e) Potential Unc tpy	3e) Potential Limited tpy	3f) Actual tpy
PM	NA	0.02	4.64	0.09	---
PM10	NA	0.02	4.64	0.09	---
PM2.5	NA	0.02	4.64	0.09	---
SO2	NA	---	---	---	---
NOx	NA	---	---	---	---
CO	NA	---	---	---	---
VOC	NA	---	---	---	---
Lead	NA	1.46E-04	0.05	6.40E-04	---
CO2	NA	---	---	---	---
CH4	NA	---	---	---	---
N2O	NA	---	---	---	---
Total GHG (CO2e)	NA	---	---	---	---
1,1,1-Trichloroethane	71-55-6	---	---	---	---
1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---
1,1,2-Trichloroethane	79-00-5	---	---	---	---
1,1-Dichloroethane	75-34-3	---	---	---	---
1,1-Dichloroethene	75-35-4	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	---	---	---	---
1,2-Dibromoethane	106-93-4	---	---	---	---
1,2-Dichloroethane	107-06-2	---	---	---	---
1,2-Dichloropropane	78-87-5	---	---	---	---
1,4-Dichlorobenzene	106-46-7	---	---	---	---
4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---
Acetaldehyde	75070	---	---	---	---
1,3-Butadiene	106990	---	---	---	---
Arsenic	7440-38-2	---	---	---	---
Benzene	71-43-2	---	---	---	---
Benzyl chloride	100-44-7	---	---	---	---
Bromoform	75-25-2	---	---	---	---
Bromomethane	74-83-9	---	---	---	---
Beryllium	7440-41-7	---	---	---	---
Cadmium	7440-43-9	---	---	---	---
Carbon disulfide	75-15-0	---	---	---	---
Carbon tetrachloride	56-23-5	---	---	---	---
Chromium	7440-47-3	---	---	---	---
Chlorobenzene	108-90-7	---	---	---	---
Chloroethane	75-00-3	---	---	---	---
Chloroform	67-66-3	---	---	---	---
Chloromethane	74-87-2	---	---	---	---
Cobalt	7440-48-4	---	---	---	---
Dichlorobenzene	25321-22-6	---	---	---	---
Ethyl Benzene	100-41-4	---	---	---	---
Formaldehyde	50-00-0	---	---	---	---
Hexachlorobutadiene	87-68-3	---	---	---	---
Hexane	110-54-3	---	---	---	---
Manganese	7439-96-5	---	---	---	---
Mercury	7439-97-6	---	---	---	---
Methylene Chloride	75-09-02	---	---	---	---
Methyl-tert-butyl ether	1634-04-4	---	---	---	---
Naphthalene	91-20-3	---	---	---	---
Nickel	7440-02-0	---	---	---	---
PAH (not including Napthalene)		---	---	---	---
POM		---	---	---	---
Propylene	115-07-1	---	---	---	---
Selenium	7782-49-2	---	---	---	---
Styrene	100-42-5	---	---	---	---
Tetrachloroethene	127-18-4	---	---	---	---
Toluene	108-88-3	---	---	---	---
Trichloroethene	79-01-6	---	---	---	---
Vinyl Acetate	108-05-4	---	---	---	---
Vinyl Chloride	75-01-4	---	---	---	---
Xylenes	1330-20-7	---	---	---	---
Total HAPs	NA	1.46E-04	0.05	6.40E-04	---

3a) Delta ID No.:					
3b) Tempo SI ID No.:		EQUI140			
Description		DC28			
3c) Pollutant Name	3d) CAS #	3e) Potential Lbs per Hr	3e) Potential Unc tpy	3e) Potential Limited tpy	3f) Actual tpy
PM	NA	0.02	3.13	0.07	---
PM10	NA	0.02	3.13	0.07	---
PM2.5	NA	0.02	3.13	0.07	---
SO2	NA	---	---	---	---
NOx	NA	---	---	---	---
CO	NA	---	---	---	---
VOC	NA	---	---	---	---
Lead	NA	1.14E-04	0.03	5.00E-04	---
CO2	NA	---	---	---	---
CH4	NA	---	---	---	---
N2O	NA	---	---	---	---
Total GHG (CO2e)	NA	---	---	---	---
1,1,1-Trichloroethane	71-55-6	---	---	---	---
1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---
1,1,2-Trichloroethane	79-00-5	---	---	---	---
1,1-Dichloroethane	75-34-3	---	---	---	---
1,1-Dichloroethene	75-35-4	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	---	---	---	---
1,2-Dibromoethane	106-93-4	---	---	---	---
1,2-Dichloroethane	107-06-2	---	---	---	---
1,2-Dichloropropane	78-87-5	---	---	---	---
1,4-Dichlorobenzene	106-46-7	---	---	---	---
4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---
Acetaldehyde	75070	---	---	---	---
1,3-Butadiene	106990	---	---	---	---
Arsenic	7440-38-2	---	---	---	---
Benzene	71-43-2	---	---	---	---
Benzyl chloride	100-44-7	---	---	---	---
Bromoform	75-25-2	---	---	---	---
Bromomethane	74-83-9	---	---	---	---
Beryllium	7440-41-7	---	---	---	---
Cadmium	7440-43-9	---	---	---	---
Carbon disulfide	75-15-0	---	---	---	---
Carbon tetrachloride	56-23-5	---	---	---	---
Chromium	7440-47-3	---	---	---	---
Chlorobenzene	108-90-7	---	---	---	---
Chloroethane	75-00-3	---	---	---	---
Chloroform	67-66-3	---	---	---	---
Chloromethane	74-87-2	---	---	---	---
Cobalt	7440-48-4	---	---	---	---
Dichlorobenzene	25321-22-6	---	---	---	---
Ethyl Benzene	100-41-4	---	---	---	---
Formaldehyde	50-00-0	---	---	---	---
Hexachlorobutadiene	87-68-3	---	---	---	---
Hexane	110-54-3	---	---	---	---
Manganese	7439-96-5	---	---	---	---
Mercury	7439-97-6	---	---	---	---
Methylene Chloride	75-09-02	---	---	---	---
Methyl-tert-butyl ether	1634-04-4	---	---	---	---
Naphthalene	91-20-3	---	---	---	---
Nickel	7440-02-0	---	---	---	---
PAH (not including Napthalene)		---	---	---	---
POM		---	---	---	---
Propylene	115-07-1	---	---	---	---
Selenium	7782-49-2	---	---	---	---
Styrene	100-42-5	---	---	---	---
Tetrachloroethene	127-18-4	---	---	---	---
Toluene	108-88-3	---	---	---	---
Trichloroethene	79-01-6	---	---	---	---
Vinyl Acetate	108-05-4	---	---	---	---
Vinyl Chloride	75-01-4	---	---	---	---
Xylenes	1330-20-7	---	---	---	---
Total HAPs	NA	1.14E-04	0.03	5.00E-04	---

3a) Delta ID No.:					
3b) Tempo SI ID No.:		EQUI141			
Description		DC29			
3c) Pollutant Name	3d) CAS #	3e) Potential Lbs per Hr	3e) Potential Unc tpy	3e) Potential Limited tpy	3f) Actual tpy
PM	NA	0.03	4.08	0.11	---
PM10	NA	0.03	4.08	0.11	---
PM2.5	NA	0.03	4.08	0.11	---
SO2	NA	---	---	---	---
NOx	NA	---	---	---	---
CO	NA	---	---	---	---
VOC	NA	---	---	---	---
Lead	NA	1.81E-04	0.05	7.94E-04	---
CO2	NA	---	---	---	---
CH4	NA	---	---	---	---
N2O	NA	---	---	---	---
Total GHG (CO2e)	NA	---	---	---	---
1,1,1-Trichloroethane	71-55-6	---	---	---	---
1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---
1,1,2-Trichloroethane	79-00-5	---	---	---	---
1,1-Dichloroethane	75-34-3	---	---	---	---
1,1-Dichloroethene	75-35-4	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	---	---	---	---
1,2-Dibromoethane	106-93-4	---	---	---	---
1,2-Dichloroethane	107-06-2	---	---	---	---
1,2-Dichloropropane	78-87-5	---	---	---	---
1,4-Dichlorobenzene	106-46-7	---	---	---	---
4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---
Acetaldehyde	75070	---	---	---	---
1,3-Butadiene	106990	---	---	---	---
Arsenic	7440-38-2	---	---	---	---
Benzene	71-43-2	---	---	---	---
Benzyl chloride	100-44-7	---	---	---	---
Bromoform	75-25-2	---	---	---	---
Bromomethane	74-83-9	---	---	---	---
Beryllium	7440-41-7	---	---	---	---
Cadmium	7440-43-9	---	---	---	---
Carbon disulfide	75-15-0	---	---	---	---
Carbon tetrachloride	56-23-5	---	---	---	---
Chromium	7440-47-3	---	---	---	---
Chlorobenzene	108-90-7	---	---	---	---
Chloroethane	75-00-3	---	---	---	---
Chloroform	67-66-3	---	---	---	---
Chloromethane	74-87-2	---	---	---	---
Cobalt	7440-48-4	---	---	---	---
Dichlorobenzene	25321-22-6	---	---	---	---
Ethyl Benzene	100-41-4	---	---	---	---
Formaldehyde	50-00-0	---	---	---	---
Hexachlorobutadiene	87-68-3	---	---	---	---
Hexane	110-54-3	---	---	---	---
Manganese	7439-96-5	---	---	---	---
Mercury	7439-97-6	---	---	---	---
Methylene Chloride	75-09-02	---	---	---	---
Methyl-tert-butyl ether	1634-04-4	---	---	---	---
Naphthalene	91-20-3	---	---	---	---
Nickel	7440-02-0	---	---	---	---
PAH (not including Napthalene)		---	---	---	---
POM		---	---	---	---
Propylene	115-07-1	---	---	---	---
Selenium	7782-49-2	---	---	---	---
Styrene	100-42-5	---	---	---	---
Tetrachloroethene	127-18-4	---	---	---	---
Toluene	108-88-3	---	---	---	---
Trichloroethene	79-01-6	---	---	---	---
Vinyl Acetate	108-05-4	---	---	---	---
Vinyl Chloride	75-01-4	---	---	---	---
Xylenes	1330-20-7	---	---	---	---
Total HAPs	NA	1.81E-04	0.05	7.94E-04	---

3a) Delta ID No.:					
3b) Tempo SI ID No.:		EQUI142			
Description		DC19			
3c) Pollutant Name	3d) CAS #	3e) Potential Lbs per Hr	3e) Potential Unc tpy	3e) Potential Limited tpy	3f) Actual tpy
PM	NA	0.02	4.45	0.08	---
PM10	NA	0.02	4.45	0.08	---
PM2.5	NA	0.02	4.45	0.08	---
SO2	NA	---	---	---	---
NOx	NA	---	---	---	---
CO	NA	---	---	---	---
VOC	NA	---	---	---	---
Lead	NA	1.36E-04	0.05	5.97E-04	---
CO2	NA	---	---	---	---
CH4	NA	---	---	---	---
N2O	NA	---	---	---	---
Total GHG (CO2e)	NA	---	---	---	---
1,1,1-Trichloroethane	71-55-6	---	---	---	---
1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---
1,1,2-Trichloroethane	79-00-5	---	---	---	---
1,1-Dichloroethane	75-34-3	---	---	---	---
1,1-Dichloroethene	75-35-4	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	---	---	---	---
1,2-Dibromoethane	106-93-4	---	---	---	---
1,2-Dichloroethane	107-06-2	---	---	---	---
1,2-Dichloropropane	78-87-5	---	---	---	---
1,4-Dichlorobenzene	106-46-7	---	---	---	---
4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---
Acetaldehyde	75070	---	---	---	---
1,3-Butadiene	106990	---	---	---	---
Arsenic	7440-38-2	---	---	---	---
Benzene	71-43-2	---	---	---	---
Benzyl chloride	100-44-7	---	---	---	---
Bromoform	75-25-2	---	---	---	---
Bromomethane	74-83-9	---	---	---	---
Beryllium	7440-41-7	---	---	---	---
Cadmium	7440-43-9	---	---	---	---
Carbon disulfide	75-15-0	---	---	---	---
Carbon tetrachloride	56-23-5	---	---	---	---
Chromium	7440-47-3	---	---	---	---
Chlorobenzene	108-90-7	---	---	---	---
Chloroethane	75-00-3	---	---	---	---
Chloroform	67-66-3	---	---	---	---
Chloromethane	74-87-2	---	---	---	---
Cobalt	7440-48-4	---	---	---	---
Dichlorobenzene	25321-22-6	---	---	---	---
Ethyl Benzene	100-41-4	---	---	---	---
Formaldehyde	50-00-0	---	---	---	---
Hexachlorobutadiene	87-68-3	---	---	---	---
Hexane	110-54-3	---	---	---	---
Manganese	7439-96-5	---	---	---	---
Mercury	7439-97-6	---	---	---	---
Methylene Chloride	75-09-02	---	---	---	---
Methyl-tert-butyl ether	1634-04-4	---	---	---	---
Naphthalene	91-20-3	---	---	---	---
Nickel	7440-02-0	---	---	---	---
PAH (not including Napthalene)		---	---	---	---
POM		---	---	---	---
Propylene	115-07-1	---	---	---	---
Selenium	7782-49-2	---	---	---	---
Styrene	100-42-5	---	---	---	---
Tetrachloroethene	127-18-4	---	---	---	---
Toluene	108-88-3	---	---	---	---
Trichloroethene	79-01-6	---	---	---	---
Vinyl Acetate	108-05-4	---	---	---	---
Vinyl Chloride	75-01-4	---	---	---	---
Xylenes	1330-20-7	---	---	---	---
Total HAPs	NA	1.36E-04	0.05	5.97E-04	---

3a) Delta ID No.:					
3b) Tempo SI ID No.:		EQUI143			
Description		DC34			
3c) Pollutant Name	3d) CAS #	3e) Potential Lbs per Hr	3e) Potential Unc tpy	3e) Potential Limited tpy	3f) Actual tpy
PM	NA	0.02	4.01	0.07	---
PM10	NA	0.02	4.01	0.07	---
PM2.5	NA	0.02	4.01	0.07	---
SO2	NA	---	---	---	---
NOx	NA	---	---	---	---
CO	NA	---	---	---	---
VOC	NA	---	---	---	---
Lead	NA	1.13E-04	0.04	4.96E-04	---
CO2	NA	---	---	---	---
CH4	NA	---	---	---	---
N2O	NA	---	---	---	---
Total GHG (CO2e)	NA	---	---	---	---
1,1,1-Trichloroethane	71-55-6	---	---	---	---
1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---
1,1,2-Trichloroethane	79-00-5	---	---	---	---
1,1-Dichloroethane	75-34-3	---	---	---	---
1,1-Dichloroethene	75-35-4	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	---	---	---	---
1,2-Dibromoethane	106-93-4	---	---	---	---
1,2-Dichloroethane	107-06-2	---	---	---	---
1,2-Dichloropropane	78-87-5	---	---	---	---
1,4-Dichlorobenzene	106-46-7	---	---	---	---
4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---
Acetaldehyde	75070	---	---	---	---
1,3-Butadiene	106990	---	---	---	---
Arsenic	7440-38-2	---	---	---	---
Benzene	71-43-2	---	---	---	---
Benzyl chloride	100-44-7	---	---	---	---
Bromoform	75-25-2	---	---	---	---
Bromomethane	74-83-9	---	---	---	---
Beryllium	7440-41-7	---	---	---	---
Cadmium	7440-43-9	---	---	---	---
Carbon disulfide	75-15-0	---	---	---	---
Carbon tetrachloride	56-23-5	---	---	---	---
Chromium	7440-47-3	---	---	---	---
Chlorobenzene	108-90-7	---	---	---	---
Chloroethane	75-00-3	---	---	---	---
Chloroform	67-66-3	---	---	---	---
Chloromethane	74-87-2	---	---	---	---
Cobalt	7440-48-4	---	---	---	---
Dichlorobenzene	25321-22-6	---	---	---	---
Ethyl Benzene	100-41-4	---	---	---	---
Formaldehyde	50-00-0	---	---	---	---
Hexachlorobutadiene	87-68-3	---	---	---	---
Hexane	110-54-3	---	---	---	---
Manganese	7439-96-5	---	---	---	---
Mercury	7439-97-6	---	---	---	---
Methylene Chloride	75-09-02	---	---	---	---
Methyl-tert-butyl ether	1634-04-4	---	---	---	---
Naphthalene	91-20-3	---	---	---	---
Nickel	7440-02-0	---	---	---	---
PAH (not including Napthalene)		---	---	---	---
POM		---	---	---	---
Propylene	115-07-1	---	---	---	---
Selenium	7782-49-2	---	---	---	---
Styrene	100-42-5	---	---	---	---
Tetrachloroethene	127-18-4	---	---	---	---
Toluene	108-88-3	---	---	---	---
Trichloroethene	79-01-6	---	---	---	---
Vinyl Acetate	108-05-4	---	---	---	---
Vinyl Chloride	75-01-4	---	---	---	---
Xylenes	1330-20-7	---	---	---	---
Total HAPs	NA	1.13E-04	0.04	4.96E-04	---

3a) Delta ID No.:					
3b) Tempo SI ID No.:		EQUI146			
Description		DC42			
3c) Pollutant Name	3d) CAS #	3e) Potential Lbs per Hr	3e) Potential Unc tpy	3e) Potential Limited tpy	3f) Actual tpy
PM	NA	0.04	10.88	0.18	---
PM10	NA	0.04	10.88	0.18	---
PM2.5	NA	0.04	10.88	0.18	---
SO2	NA	---	---	---	---
NOx	NA	---	---	---	---
CO	NA	---	---	---	---
VOC	NA	---	---	---	---
Lead	NA	2.94E-04	0.12	1.29E-03	---
CO2	NA	---	---	---	---
CH4	NA	---	---	---	---
N2O	NA	---	---	---	---
Total GHG (CO2e)	NA	---	---	---	---
1,1,1-Trichloroethane	71-55-6	---	---	---	---
1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---
1,1,2-Trichloroethane	79-00-5	---	---	---	---
1,1-Dichloroethane	75-34-3	---	---	---	---
1,1-Dichloroethene	75-35-4	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	---	---	---	---
1,2-Dibromoethane	106-93-4	---	---	---	---
1,2-Dichloroethane	107-06-2	---	---	---	---
1,2-Dichloropropane	78-87-5	---	---	---	---
1,4-Dichlorobenzene	106-46-7	---	---	---	---
4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---
Acetaldehyde	75070	---	---	---	---
1,3-Butadiene	106990	---	---	---	---
Arsenic	7440-38-2	---	---	---	---
Benzene	71-43-2	---	---	---	---
Benzyl chloride	100-44-7	---	---	---	---
Bromoform	75-25-2	---	---	---	---
Bromomethane	74-83-9	---	---	---	---
Beryllium	7440-41-7	---	---	---	---
Cadmium	7440-43-9	---	---	---	---
Carbon disulfide	75-15-0	---	---	---	---
Carbon tetrachloride	56-23-5	---	---	---	---
Chromium	7440-47-3	---	---	---	---
Chlorobenzene	108-90-7	---	---	---	---
Chloroethane	75-00-3	---	---	---	---
Chloroform	67-66-3	---	---	---	---
Chloromethane	74-87-2	---	---	---	---
Cobalt	7440-48-4	---	---	---	---
Dichlorobenzene	25321-22-6	---	---	---	---
Ethyl Benzene	100-41-4	---	---	---	---
Formaldehyde	50-00-0	---	---	---	---
Hexachlorobutadiene	87-68-3	---	---	---	---
Hexane	110-54-3	---	---	---	---
Manganese	7439-96-5	---	---	---	---
Mercury	7439-97-6	---	---	---	---
Methylene Chloride	75-09-02	---	---	---	---
Methyl-tert-butyl ether	1634-04-4	---	---	---	---
Naphthalene	91-20-3	---	---	---	---
Nickel	7440-02-0	---	---	---	---
PAH (not including Napthalene)		---	---	---	---
POM		---	---	---	---
Propylene	115-07-1	---	---	---	---
Selenium	7782-49-2	---	---	---	---
Styrene	100-42-5	---	---	---	---
Tetrachloroethene	127-18-4	---	---	---	---
Toluene	108-88-3	---	---	---	---
Trichloroethene	79-01-6	---	---	---	---
Vinyl Acetate	108-05-4	---	---	---	---
Vinyl Chloride	75-01-4	---	---	---	---
Xylenes	1330-20-7	---	---	---	---
Total HAPs	NA	2.94E-04	0.12	1.29E-03	---

Alternate Format

GI-07 Spreadsheet

Facility Emmison Summary

Air Quality Permit Program

Doc Type: Permit Application

1a) Delta ID No.:						1a) Delta ID No.:						1a) Delta ID No.:						1a) Delta ID No.:						1a) Delta ID No.:					
1b) Tempo SI ID No.:		EQUI147				1b) Tempo SI ID No.:		EQUI149				1b) Tempo SI ID No.:		EQUI150				1b) Tempo SI ID No.:		EQUI152				1b) Tempo SI ID No.:		EQUI153			
Description		DC38				Description		DC40				Description		DC48				Description		DC41				Description		DC44			
1c)	1d)	1e) Potential			1f)	1c)	1d)	1e) Potential			1f)	1c)	1d)	1e) Potential			1f)	1c)	1d)	1e) Potential			1f)	1c)	1d)	1e) Potential			1f)	1c)	1d)	1e) Potential			1f)
Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy	Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy	Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy	Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy	Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy	Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy
PM	NA	0.06	5.43	0.18	—	PM	NA	0.02	2.89	0.09	—	PM	NA	0.02	4.78	0.09	—	PM	NA	0.05	9.36	0.20	—	PM	NA	0.06	3.91	0.18	—	PM	NA	0.06	9.64	0.17	—
PM10	NA	0.06	5.43	0.18	—	PM10	NA	0.02	2.89	0.09	—	PM10	NA	0.02	4.78	0.09	—	PM10	NA	0.05	9.36	0.20	—	PM10	NA	0.06	3.91	0.18	—	PM10	NA	0.06	9.64	0.17	—
PM2.5	NA	0.06	5.43	0.18	—	PM2.5	NA	0.02	2.89	0.09	—	PM2.5	NA	0.02	4.78	0.09	—	PM2.5	NA	0.05	9.36	0.20	—	PM2.5	NA	0.06	3.91	0.18	—	PM2.5	NA	0.06	9.64	0.17	—
SO2	NA	—	—	—	—	SO2	NA	—	—	—	—	SO2	NA	—	—	—	—	SO2	NA	—	—	—	—	SO2	NA	—	—	—	—	SO2	NA	—	—	—	—
NOx	NA	—	—	—	—	NOx	NA	—	—	—	—	NOx	NA	—	—	—	—	NOx	NA	—	—	—	—	NOx	NA	—	—	—	—	NOx	NA	—	—	—	—
CO	NA	—	—	—	—	CO	NA	—	—	—	—	CO	NA	—	—	—	—	CO	NA	—	—	—	—	CO	NA	—	—	—	—	CO	NA	—	—	—	—
VOC	NA	—	—	—	—	VOC	NA	—	—	—	—	VOC	NA	—	—	—	—	VOC	NA	—	—	—	—	VOC	NA	—	—	—	—	VOC	NA	—	—	—	—
Lead	NA	2.94E-04	0.04	1.29E-03	—	Lead	NA	1.46E-04	0.03	6.43E-04	—	Lead	NA	1.50E-04	0.05	6.58E-04	—	Lead	NA	3.26E-04	0.07	1.43E-03	—	Lead	NA	2.89E-04	0.04	1.27E-03	—	Lead	NA	2.78E-04	0.11	1.22E-03	—
CO2	NA	—	—	—	—	CO2	NA	—	—	—	—	CO2	NA	—	—	—	—	CO2	NA	—	—	—	—	CO2	NA	—	—	—	—	CO2	NA	—	—	—	—
CH4	NA	—	—	—	—	CH4	NA	—	—	—	—	CH4	NA	—	—	—	—	CH4	NA	—	—	—	—	CH4	NA	—	—	—	—	CH4	NA	—	—	—	—
N2O	NA	—	—	—	—	N2O	NA	—	—	—	—	N2O	NA	—	—	—	—	N2O	NA	—	—	—	—	N2O	NA	—	—	—	—	N2O	NA	—	—	—	—
Total GHG (CO2e)	NA	—	—	—	—	Total GHG (CO2e)	NA	—	—	—	—	Total GHG (CO2e)	NA	—	—	—	—	Total GHG (CO2e)	NA	—	—	—	—	Total GHG (CO2e)	NA	—	—	—	—	Total GHG (CO2e)	NA	—	—	—	—
1,1,1-Trichloroethane	71-55-6	—	—	—	—	1,1,1-Trichloroethane	71-55-6	—	—	—	—	1,1,1-Trichloroethane	71-55-6	—	—	—	—	1,1,1-Trichloroethane	71-55-6	—	—	—	—	1,1,1-Trichloroethane	71-55-6	—	—	—	—	1,1,1-Trichloroethane	71-55-6	—	—	—	—
1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—	1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—	1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—	1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—	1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—	1,1,2,2-Tetrachloroethane	79-34-5	—	—	—	—
1,1,2-Trichloroethane	79-00-5	—	—	—	—	1,1,2-Trichloroethane	79-00-5	—	—	—	—	1,1,2-Trichloroethane	79-00-5	—	—	—	—	1,1,2-Trichloroethane	79-00-5	—	—	—	—	1,1,2-Trichloroethane	79-00-5	—	—	—	—	1,1,2-Trichloroethane	79-00-5	—	—	—	—
1,1-Dichloroethane	75-34-3	—	—	—	—	1,1-Dichloroethane	75-34-3	—	—	—	—	1,1-Dichloroethane	75-34-3	—	—	—	—	1,1-Dichloroethane	75-34-3	—	—	—	—	1,1-Dichloroethane	75-34-3	—	—	—	—	1,1-Dichloroethane	75-34-3	—	—	—	—
1,1-Dichloroethene	75-35-4	—	—	—	—	1,1-Dichloroethene	75-35-4	—	—	—	—	1,1-Dichloroethene	75-35-4	—	—	—	—	1,1-Dichloroethene	75-35-4	—	—	—	—	1,1-Dichloroethene	75-35-4	—	—	—	—	1,1-Dichloroethene	75-35-4	—	—	—	—
1,2,4-Trichlorobenzene	120-82-1	—	—	—	—	1,2,4-Trichlorobenzene	120-82-1	—	—	—	—	1,2,4-Trichlorobenzene	120-82-1	—	—	—	—	1,2,4-Trichlorobenzene	120-82-1	—	—	—	—	1,2,4-Trichlorobenzene	120-82-1	—	—	—	—	1,2,4-Trichlorobenzene	120-82-1	—	—	—	—
1,2-Dibromoethane	106-93-4	—	—	—	—	1,2-Dibromoethane	106-93-4	—	—	—	—	1,2-Dibromoethane	106-93-4	—	—	—	—	1,2-Dibromoethane	106-93-4	—	—	—	—	1,2-Dibromoethane	106-93-4	—	—	—	—	1,2-Dibromoethane	106-93-4	—	—	—	—
1,2-Dichloroethane	107-06-2	—	—	—	—	1,2-Dichloroethane	107-06-2	—	—	—	—	1,2-Dichloroethane	107-06-2	—	—	—	—	1,2-Dichloroethane	107-06-2	—	—	—	—	1,2-Dichloroethane	107-06-2	—	—	—	—	1,2-Dichloroethane	107-06-2	—	—	—	—
1,2-Dichloropropane	78-87-5	—	—	—	—	1,2-Dichloropropane	78-87-5	—	—	—	—	1,2-Dichloropropane	78-87-5	—	—	—	—	1,2-Dichloropropane	78-87-5	—	—	—	—	1,2-Dichloropropane	78-87-5	—	—	—	—	1,2-Dichloropropane	78-87-5	—	—	—	—
1,4-Dichlorobenzene	106-46-7	—	—	—	—	1,4-Dichlorobenzene	106-46-7	—	—	—	—	1,4-Dichlorobenzene	106-46-7	—	—	—	—	1,4-Dichlorobenzene	106-46-7	—	—	—	—	1,4-Dichlorobenzene	106-46-7	—	—	—	—	1,4-Dichlorobenzene	106-46-7	—	—	—	—
4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—	4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—	4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—	4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—	4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—	4-Methyl-2-pentanone(MIBK)	108-10-1	—	—	—	—
Acetaldehyde	75070	—	—	—	—	Acetaldehyde	75070	—	—	—	—	Acetaldehyde	75070	—	—	—	—	Acetaldehyde	75070	—	—	—	—	Acetaldehyde	75070	—	—	—	—	Acetaldehyde	75070	—	—	—	—
1,3-Butadiene	106990	—	—	—	—	1,3-Butadiene	106990	—	—	—	—	1,3-Butadiene	106990	—	—	—	—	1,3-Butadiene	106990	—	—	—	—	1,3-Butadiene	106990	—	—	—	—	1,3-Butadiene	106990	—	—	—	—
Arsenic	7440-38-2	—	—	—	—	Arsenic	7440-38-2	—	—	—	—	Arsenic	7440-38-2	—	—	—	—	Arsenic	7440-38-2	—	—	—	—	Arsenic	7440-38-2	—	—	—	—	Arsenic	7440-38-2	—	—	—	—
Benzene	71-43-2	—	—	—	—	Benzene	71-43-2	—	—	—	—	Benzene	71-43-2	—	—	—	—	Benzene	71-43-2	—	—	—	—	Benzene	71-43-2	—	—	—	—	Benzene	71-43-2	—	—	—	—
Benzyl chloride	100-44-7	—	—	—	—	Benzyl chloride	100-44-7	—	—	—	—	Benzyl chloride	100-44-7	—	—	—	—	Benzyl chloride	100-44-7	—	—	—	—	Benzyl chloride	100-44-7	—	—	—	—	Benzyl chloride	100-44-7	—	—	—	—
Bromoform	75-25-2	—	—	—	—	Bromoform	75-25-2	—	—	—	—	Bromoform	75-25-2	—	—	—	—	Bromoform	75-25-2	—	—	—	—	Bromoform	75-25-2	—	—	—	—	Bromoform	75-25-2	—	—	—	—
Bromomethane	74-83-9	—	—	—	—	Bromomethane	74-83-9	—	—	—	—	Bromomethane	74-83-9	—	—	—	—	Bromomethane	74-83-9	—	—	—	—	Bromomethane	74-83-9	—	—	—	—	Bromomethane	74-83-9	—	—	—	—
Beryllium	7440-41-7	—	—	—	—	Beryllium	7440-41-7	—	—	—	—	Beryllium	7440-41-7	—	—	—	—	Beryllium	7440-41-7	—	—	—	—	Beryllium	7440-41-7	—	—	—	—	Beryllium	7440-41-7	—	—	—	—
Cadmium	7440-43-9	—	—	—	—	Cadmium	7440-43-9	—	—	—	—	Cadmium	7440-43-9	—	—	—	—	Cadmium	7440-43-9	—	—	—	—	Cadmium	7440-43-9	—	—	—	—	Cadmium	7440-43-9	—	—	—	—
Carbon disulfide	75-15-0	—	—	—	—	Carbon disulfide	75-15-0	—	—	—	—	Carbon disulfide	75-15-0	—	—	—	—	Carbon disulfide	75-15-0	—	—	—	—	Carbon disulfide	75-15-0	—	—	—	—	Carbon disulfide	75-15-0	—	—	—	—
Carbon tetrachloride	56-23-5	—	—	—	—	Carbon tetrachloride	56-23-5	—	—	—	—	Carbon tetrachloride	56-23-5	—	—	—	—	Carbon tetrachloride	56-23-5	—	—	—	—	Carbon tetrachloride	56-23-5	—	—	—	—	Carbon tetrachloride	56-23-5	—	—	—	—
Chromium	7440-47-3	—	—	—	—	Chromium	7440-47-3	—	—	—	—	Chromium	7440-47-3	—	—	—	—	Chromium	7440-47-3	—	—	—	—	Chromium	7440-47-3	—	—	—	—	Chromium	7440-47-3	—	—	—	—
Chlorobenzene	108-90-7	—	—	—	—	Chlorobenzene	108-90-7	—	—	—	—	Chlorobenzene	108-90-7	—	—	—	—	Chlorobenzene	108-90-7	—	—	—	—	Chlorobenzene	108-90-7	—	—	—	—	Chlorobenzene	108-90-7	—	—	—	—
Chloroethane	75-00-3	—	—	—	—	Chloroethane	75-00-3	—	—	—	—	Chloroethane	75-00-3	—	—	—	—	Chloroethane	75-00-3	—	—	—	—	Chloroethane	75-00-3	—	—	—	—	Chloroethane	75-00-3	—	—	—	—
Chloroform	67-66-3	—	—	—	—	Chloroform	67-66-3	—	—	—	—	Chloroform	67-66-3	—	—	—	—	Chloroform	67-66-3	—	—	—	—	Chloroform	67-66-3	—	—	—	—	Chloroform	67-66-3	—	—	—	—
Chloromethane	74-87-2	—	—	—	—	Chloromethane	74-87-2	—	—	—	—	Chloromethane	74-87-2	—	—	—	—	Chloromethane	74-87-2	—	—	—	—	Chloromethane	74-87-2	—	—	—	—	Chloromethane	74-87-2	—	—	—	—
Cobalt	7440-48-4	—	—	—	—	Cobalt	7440-48-4	—	—	—	—	Cobalt	7440-48-4	—	—	—	—	Cobalt	7440-48-4	—	—	—	—	Cobalt	7440-48-4	—	—	—	—	Cobalt	7440-48-4	—	—	—	—
Dichlorobenzene	25321-22-6	—	—	—	—	Dichlorobenzene	25321-22-6	—	—	—	—	Dichlorobenzene	25321-22-6	—	—	—	—	Dichlorobenzene	25321-22-6	—	—	—	—	Dichlorobenzene	25321-22-6	—	—	—	—	Dichlorobenzene	25321-22-6	—	—	—	—
Ethyl Benzene	100-41-4	—	—	—	—	Ethyl Benzene	100-41-4	—	—	—	—	Ethyl Benzene	100-41-4	—	—	—	—	Ethyl Benzene	100-41-4	—	—	—	—	Ethyl Benzene	100-41-4	—	—	—	—	Ethyl Benzene	100-41-4	—	—	—	—
Formaldehyde	50-00-0	—	—	—	—	Formaldehyde	50-00-0	—	—	—	—	Formaldehyde	50-00-0	—	—	—	—	Formaldehyde	50-00-0	—	—	—	—	Formaldehyde	50-00-0	—	—	—	—	Formaldehyde	50-00-0	—	—	—	—
Hexachlorobutadiene	87-68-3	—	—	—	—	Hexachlorobutadiene	87-68-3	—	—	—	—	Hexachlorobutadiene	87-68-3	—	—	—	—	Hexachlorobutadiene	87-68-3	—	—	—	—	Hexachlorobutadiene	87-68-3	—	—	—	—	Hexachlorobutadiene	87-68-3	—	—	—	—
Hexane	110-54-3	—	—	—	—	Hexane	110-54-3	—	—	—	—	Hexane	110-54-3	—	—	—	—	Hexane	110-54-3	—	—	—	—	Hexane	110-54-3	—	—	—	—	Hexane	110-54-3	—	—	—	—
Manganese	7439-96-5	—	—	—	—	Manganese	7439-96-5	—	—	—	—	Manganese	7439-96-5	—	—	—	—	Manganese	7439-96-5	—	—	—	—	Manganese	7439-96-5	—	—	—	—	Manganese	7439-96-5	—	—	—	—
Mercury	7439-97-6	—	—	—	—	Mercury	7439-97-6	—	—	—	—	Mercury	7439-97-6	—	—	—	—	Mercury	7439-97-6	—	—	—	—	Mercury	7439-97-6	—	—	—	—	Mercury	7439-97-6	—	—	—	—
Methylene Chloride	75-09-02	—	—	—	—	Methylene Chloride	75-09-02	—	—	—	—	Methylene Chloride	75-09-02	—	—	—	—	Methylene Chloride	75-09-02	—	—	—	—	Methylene Chloride	75-09-02	—	—	—	—	Methylene Chloride	75-09-02	—	—	—	—
Methyl tert-butyl ether	1634-04-4	—	—	—	—	Methyl tert-butyl ether	1634-04-4	—	—	—	—	Methyl tert-butyl ether	1634-04-4	—	—	—	—	Methyl tert-butyl ether	1634-04-4	—	—	—	—	Methyl tert-butyl ether	1634-04-4	—	—	—	—	Methyl tert-butyl ether	1634-04-4	—	—	—	—
Naphthalene	91-20-3	—	—	—	—	Naphthalene	91-20-3	—	—	—	—	Naphthalene	91-20-3	—	—	—	—	Naphthalene	91-20-3	—	—	—	—	Naphthalene	91-20-3	—	—	—	—	Naphthalene	91-20-3	—	—	—	—
Nickel	7440-02-0	—	—	—	—	Nickel	7440-02-0	—	—	—	—	Nickel	7440-02-0	—	—	—	—	Nickel	7440-02-0	—	—	—	—	Nickel	7440-02-0	—	—	—	—	Nickel	7440-02-0	—	—	—	—
PAH (not including Naphthalene)		—	—	—	—	PAH (not including Naphthalene)		—	—	—	—	PAH (not including Naphthalene)		—	—	—	—	PAH (not including Naphthalene)		—	—	—	—	PAH (not including Naphthalene)		—	—	—	—	PAH (not including Naphthalene)		—	—	—	—
POM		—	—	—	—	POM		—	—	—	—	POM		—	—	—	—	POM		—	—	—	—	POM		—	—	—	—	POM		—	—	—	—
Propylene	115-07-1	—	—	—	—	Propylene	115-07-1	—	—	—	—	Propylene	115-07-1	—	—	—	—	Propylene	115-07-1	—	—	—	—	Propylene	115-07-1	—	—	—	—	Propylene	115-07-1	—	—	—	—
Selenium	7782-49-2	—	—	—	—	Selenium	7782-49-2	—	—	—	—	Selenium	7782-49-2	—	—	—	—	Selenium	7782-49-2	—	—	—	—	Selenium	7782-49-2	—	—	—	—	Selenium	7782-49-2	—	—	—	—
Styrene	100-42-5	—	—	—	—	Styrene	100-42-5	—	—	—	—	Styrene	100-42-5	—	—	—	—	Styrene	100-42-5	—	—	—	—	Styrene	100-42-5	—	—	—	—	Styrene	100-42-5	—	—	—	—
Tetrachloroethene	127-18-4	—	—	—	—	Tetrachloroethene	127-18-4	—	—	—	—	Tetrachloroethene	127-18-4	—	—	—	—	Tetrachloroethene	127-18-4	—	—	—	—	Tetrachloroethene	127-18-4	—	—	—	—	Tetrachloroethene	127-18-4	—	—	—	—
Toluene	108-88-3	—	—	—	—	Toluene	108-88-3	—	—	—	—	Toluene	108-88-3	—	—	—	—	Toluene	108-88-3	—	—	—	—	Toluene	108-88-3	—	—	—	—	Toluene	108-88-3	—	—	—	—
Trichloroethene	79-01-6	—	—	—	—	Trichloroethene	79-01-6	—	—	—	—	Trichloroethene	79-01-6	—	—	—	—	Trichloroethene	79-01-6	—	—	—	—	Trichloroethene	79-01-6	—	—	—	—	Trichloroethene	79-01-6	—	—	—	—
Vinyl Acetate	108-05-4	—	—	—	—	Vinyl Acetate	108-05-4	—	—	—	—	Vinyl Acetate	108-05-4	—	—	—	—	Vinyl Acetate	108-05-4	—	—	—	—	Vinyl Acetate	108-05-4	—	—	—	—	Vinyl Acetate	108-05-4	—	—	—	—
Vinyl Chloride	75-01-4	—	—	—	—	Vinyl Chloride	75-01-4	—	—	—	—	Vinyl Chloride	75-01-4	—	—	—	—	Vinyl Chloride	75-01-4	—	—	—	—	Vinyl Chloride	75-01-4	—	—	—	—	Vinyl Chloride	75-01-4	—	—	—	—
Xylenes	1330-20-7	—	—	—	—	Xylenes	1330-20-7	—	—	—	—	Xylenes	1330-20-7	—	—	—	—	Xylenes	1330-20-7	—	—	—	—	Xylenes	1330-20-7	—	—	—	—	Xylenes	1330-20-7	—	—	—	—
Total HAPs	NA	2.94E-04	0.06	1.29E-03	—	Total HAPs	NA	1.46E-04	0.03	6.43E-04	—	Total HAPs	NA	1.50E-04	0.05	6.58E-04	—	Total HAPs	NA	3.26E-04	0.07	1.43E-03	—	Total HAPs	NA	2.89E-04	0.04	1.27E-03	—	Total HAPs	NA	2.78E-04	0.11	1.22E-03	—

Alternate Format

GI-07 Spreadsheet

Facility Emmison Summary
Air Quality Permit Program
Doc Type: Permit Application

1a) Delta ID No.:						1a) Delta ID No.:						1a) Delta ID No.:						1a) Delta ID No.:						1a) Delta ID No.:						1a) Delta ID No.:					
1b) Tempo SI ID No.:		EQUI155				1b) Tempo SI ID No.:		EQUI156				1b) Tempo SI ID No.:		EQUI157				1b) Tempo SI ID No.:		EQUI158				1b) Tempo SI ID No.:		EQUI160				1b) Tempo SI ID No.:		EQUI222			
Description		DCE2				Description		DCS0				Description		DCS1				Description		DCS3				Description		Billet Saw				Description		Natural Gas Boiler Oven			
1c)	1d)	3a) Potential:			2)	1c)	1d)	3a) Potential:			2)	1c)	1d)	3a) Potential:			2)	1c)	1d)	3a) Potential:			2)	1c)	1d)	3a) Potential:			2)	1c)	1d)	3a) Potential:			2)
Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy	Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy	Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy	Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy	Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy	Pollutant Name	CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy
PM	NA	0.02	4.09	0.07	---	PM	NA	0.03	4.79	0.13	---	PM	NA	0.05	8.49	0.20	---	PM	NA	0.04	4.79	0.19	---	PM	NA	2.25E-03	0.04	9.86E-03	---	PM	NA	2.24E-03	9.79E-03	9.79E-03	---
PM10	NA	0.02	4.09	0.07	---	PM10	NA	0.03	4.79	0.13	---	PM10	NA	0.05	8.49	0.20	---	PM10	NA	0.04	4.79	0.19	---	PM10	NA	2.25E-03	0.04	9.86E-03	---	PM10	NA	2.24E-03	9.79E-03	9.79E-03	---
PM2.5	NA	0.02	4.09	0.07	---	PM2.5	NA	0.03	4.79	0.13	---	PM2.5	NA	0.05	8.49	0.20	---	PM2.5	NA	0.04	4.79	0.19	---	PM2.5	NA	2.25E-03	0.04	9.86E-03	---	PM2.5	NA	2.24E-03	9.79E-03	9.79E-03	---
SO2	NA	---	---	---	---	SO2	NA	---	---	---	---	SO2	NA	---	---	---	---	SO2	NA	---	---	---	---	SO2	NA	---	---	---	---	SO2	NA	1.78E-06	7.73E-06	7.73E-06	---
NOx	NA	---	---	---	---	NOx	NA	---	---	---	---	NOx	NA	---	---	---	---	NOx	NA	---	---	---	---	NOx	NA	---	---	---	---	NOx	NA	0.03	0.13	0.13	---
CO	NA	---	---	---	---	CO	NA	---	---	---	---	CO	NA	---	---	---	---	CO	NA	---	---	---	---	CO	NA	---	---	---	---	CO	NA	0.02	0.11	0.11	---
VOC	NA	---	---	---	---	VOC	NA	---	---	---	---	VOC	NA	---	---	---	---	VOC	NA	---	---	---	---	VOC	NA	---	---	---	---	VOC	NA	1.62E-03	7.09E-03	7.09E-03	---
Lead	NA	1.13E-04	0.05	4.96E-04	---	Lead	NA	2.10E-04	0.01	9.18E-04	---	Lead	NA	3.23E-04	0.09	1.40E-03	---	Lead	NA	3.02E-04	0.01	1.32E-03	---	Lead	NA	1.07E-04	0.00	4.71E-04	---	Lead	NA	1.47E-07	6.44E-07	6.44E-07	---
CO2	NA	---	---	---	---	CO2	NA	---	---	---	---	CO2	NA	---	---	---	---	CO2	NA	---	---	---	---	CO2	NA	---	---	---	---	CO2	NA	35.09	153.71	153.71	---
CH4	NA	---	---	---	---	CH4	NA	---	---	---	---	CH4	NA	---	---	---	---	CH4	NA	---	---	---	---	CH4	NA	---	---	---	---	CH4	NA	6.60E-04	2.89E-03	2.89E-03	---
N2O	NA	---	---	---	---	N2O	NA	---	---	---	---	N2O	NA	---	---	---	---	N2O	NA	---	---	---	---	N2O	NA	---	---	---	---	N2O	NA	6.60E-05	2.89E-04	2.89E-04	---
Total GHG (CO2e)	NA	---	---	---	---	Total GHG (CO2e)	NA	---	---	---	---	Total GHG (CO2e)	NA	---	---	---	---	Total GHG (CO2e)	NA	---	---	---	---	Total GHG (CO2e)	NA	---	---	---	---	Total GHG (CO2e)	NA	35.13	153.87	153.87	---
1,1,1-Trichloroethane	71-55-6	---	---	---	---	1,1,1-Trichloroethane	71-55-6	---	---	---	---	1,1,1-Trichloroethane	71-55-6	---	---	---	---	1,1,1-Trichloroethane	71-55-6	---	---	---	---	1,1,1-Trichloroethane	71-55-6	---	---	---	---	1,1,1-Trichloroethane	71-55-6	---	---	---	---
1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---	1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---	1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---	1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---	1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---	1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---
1,1,2-Trichloroethane	79-00-5	---	---	---	---	1,1,2-Trichloroethane	79-00-5	---	---	---	---	1,1,2-Trichloroethane	79-00-5	---	---	---	---	1,1,2-Trichloroethane	79-00-5	---	---	---	---	1,1,2-Trichloroethane	79-00-5	---	---	---	---	1,1,2-Trichloroethane	79-00-5	---	---	---	---
1,1-Dichloroethane	75-34-3	---	---	---	---	1,1-Dichloroethane	75-34-3	---	---	---	---	1,1-Dichloroethane	75-34-3	---	---	---	---	1,1-Dichloroethane	75-34-3	---	---	---	---	1,1-Dichloroethane	75-34-3	---	---	---	---	1,1-Dichloroethane	75-34-3	---	---	---	---
1,1-Dichloroethene	75-35-4	---	---	---	---	1,1-Dichloroethene	75-35-4	---	---	---	---	1,1-Dichloroethene	75-35-4	---	---	---	---	1,1-Dichloroethene	75-35-4	---	---	---	---	1,1-Dichloroethene	75-35-4	---	---	---	---	1,1-Dichloroethene	75-35-4	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	---	---	---	---	1,2,4-Trichlorobenzene	120-82-1	---	---	---	---	1,2,4-Trichlorobenzene	120-82-1	---	---	---	---	1,2,4-Trichlorobenzene	120-82-1	---	---	---	---	1,2,4-Trichlorobenzene	120-82-1	---	---	---	---	1,2,4-Trichlorobenzene	120-82-1	---	---	---	---
1,2-Dibromoethane	106-93-4	---	---	---	---	1,2-Dibromoethane	106-93-4	---	---	---	---	1,2-Dibromoethane	106-93-4	---	---	---	---	1,2-Dibromoethane	106-93-4	---	---	---	---	1,2-Dibromoethane	106-93-4	---	---	---	---	1,2-Dibromoethane	106-93-4	---	---	---	---
1,2-Dichloroethane	107-06-2	---	---	---	---	1,2-Dichloroethane	107-06-2	---	---	---	---	1,2-Dichloroethane	107-06-2	---	---	---	---	1,2-Dichloroethane	107-06-2	---	---	---	---	1,2-Dichloroethane	107-06-2	---	---	---	---	1,2-Dichloroethane	107-06-2	---	---	---	---
1,2-Dichloropropane	78-87-5	---	---	---	---	1,2-Dichloropropane	78-87-5	---	---	---	---	1,2-Dichloropropane	78-87-5	---	---	---	---	1,2-Dichloropropane	78-87-5	---	---	---	---	1,2-Dichloropropane	78-87-5	---	---	---	---	1,2-Dichloropropane	78-87-5	---	---	---	---
1,4-Dichlorobenzene	106-46-7	---	---	---	---	1,4-Dichlorobenzene	106-46-7	---	---	---	---	1,4-Dichlorobenzene	106-46-7	---	---	---	---	1,4-Dichlorobenzene	106-46-7	---	---	---	---	1,4-Dichlorobenzene	106-46-7	---	---	---	---	1,4-Dichlorobenzene	106-46-7	---	---	---	---
4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---	4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---	4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---	4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---	4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---	4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---
Acetaldehyde	75070	---	---	---	---	Acetaldehyde	75070	---	---	---	---	Acetaldehyde	75070	---	---	---	---	Acetaldehyde	75070	---	---	---	---	Acetaldehyde	75070	---	---	---	---	Acetaldehyde	75070	---	---	---	---
1,3-Butadiene	106990	---	---	---	---	1,3-Butadiene	106990	---	---	---	---	1,3-Butadiene	106990	---	---	---	---	1,3-Butadiene	106990	---	---	---	---	1,3-Butadiene	106990	---	---	---	---	1,3-Butadiene	106990	---	---	---	---
Arsenic	7440-38-2	---	---	---	---	Arsenic	7440-38-2	---	---	---	---	Arsenic	7440-38-2	---	---	---	---	Arsenic	7440-38-2	---	---	---	---	Arsenic	7440-38-2	---	---	---	---	Arsenic	7440-38-2	5.88E-08	2.58E-07	2.58E-07	---
Benzene	71-43-2	---	---	---	---	Benzene	71-43-2	---	---	---	---	Benzene	71-43-2	---	---	---	---	Benzene	71-43-2	---	---	---	---	Benzene	71-43-2	---	---	---	---	Benzene	71-43-2	6.18E-07	2.71E-06	2.71E-06	---
Benzyl chloride	100-44-7	---	---	---	---	Benzyl chloride	100-44-7	---	---	---	---	Benzyl chloride	100-44-7	---	---	---	---	Benzyl chloride	100-44-7	---	---	---	---	Benzyl chloride	100-44-7	---	---	---	---	Benzyl chloride	100-44-7	---	---	---	---
Bromoform	75-25-2	---	---	---	---	Bromoform	75-25-2	---	---	---	---	Bromoform	75-25-2	---	---	---	---	Bromoform	75-25-2	---	---	---	---	Bromoform	75-25-2	---	---	---	---	Bromoform	75-25-2	---	---	---	---
Bromomethane	74-83-9	---	---	---	---	Bromomethane	74-83-9	---	---	---	---	Bromomethane	74-83-9	---	---	---	---	Bromomethane	74-83-9	---	---	---	---	Bromomethane	74-83-9	---	---	---	---	Bromomethane	74-83-9	---	---	---	---
Beryllium	7440-41-7	---	---	---	---	Beryllium	7440-41-7	---	---	---	---	Beryllium	7440-41-7	---	---	---	---	Beryllium	7440-41-7	---	---	---	---	Beryllium	7440-41-7	---	---	---	---	Beryllium	7440-41-7	3.53E-09	1.55E-08	1.55E-08	---
Cadmium	7440-43-9	---	---	---	---	Cadmium	7440-43-9	---	---	---	---	Cadmium	7440-43-9	---	---	---	---	Cadmium	7440-43-9	---	---	---	---	Cadmium	7440-43-9	---	---	---	---	Cadmium	7440-43-9	3.24E-07	1.41E-06	1.41E-06	---
Carbon disulfide	75-15-0	---	---	---	---	Carbon disulfide	75-15-0	---	---	---	---	Carbon disulfide	75-15-0	---	---	---	---	Carbon disulfide	75-15-0	---	---	---	---	Carbon disulfide	75-15-0	---	---	---	---	Carbon disulfide	75-15-0	---	---	---	---
Carbon tetrachloride	56-23-5	---	---	---	---	Carbon tetrachloride	56-23-5	---	---	---	---	Carbon tetrachloride	56-23-5	---	---	---	---	Carbon tetrachloride	56-23-5	---	---	---	---	Carbon tetrachloride	56-23-5	---	---	---	---	Carbon tetrachloride	56-23-5	---	---	---	---
Chromium	7440-47-3	---	---	---	---	Chromium	7440-47-3	---	---	---	---	Chromium	7440-47-3	---	---	---	---	Chromium	7440-47-3	---	---	---	---	Chromium	7440-47-3	---	---	---	---	Chromium	7440-47-3	8.13E-07	1.80E-06	1.80E-06	---
Chlorobenzene	108-90-7	---	---	---	---	Chlorobenzene	108-90-7	---	---	---	---	Chlorobenzene	108-90-7	---	---	---	---	Chlorobenzene	108-90-7	---	---	---	---	Chlorobenzene	108-90-7	---	---	---	---	Chlorobenzene	108-90-7	---	---	---	---
Chloroethane	75-00-3	---	---	---	---	Chloroethane	75-00-3	---	---	---	---	Chloroethane	75-00-3	---	---	---	---	Chloroethane	75-00-3	---	---	---	---	Chloroethane	75-00-3	---	---	---	---	Chloroethane	75-00-3	---	---	---	---
Chloroform	67-66-3	---	---	---	---	Chloroform	67-66-3	---	---	---	---	Chloroform	67-66-3	---	---	---	---	Chloroform	67-66-3	---	---	---	---	Chloroform	67-66-3	---	---	---	---	Chloroform	67-66-3	---	---	---	---
Chloromethane	74-87-2	---	---	---	---	Chloromethane	74-87-2	---	---	---	---	Chloromethane	74-87-2	---	---	---	---	Chloromethane	74-87-2	---	---	---	---	Chloromethane	74-87-2	---	---	---	---	Chloromethane	74-87-2	---	---	---	---
Cobalt	7440-48-4	---	---	---	---	Cobalt	7440-48-4	---	---	---	---	Cobalt	7440-48-4	---	---	---	---	Cobalt	7440-48-4	---	---	---	---	Cobalt	7440-48-4	---	---	---	---	Cobalt	7440-48-4	2.67E-08	1.09E-07	1.09E-07	---
Dichlorobenzene	25321-22-6	---	---	---	---	Dichlorobenzene	25321-22-6	---	---	---	---	Dichlorobenzene	25321-22-6	---	---	---	---	Dichlorobenzene	25321-22-6	---	---	---	---	Dichlorobenzene	25321-22-6	---	---	---	---	Dichlorobenzene	25321-22-6	3.53E-07	1.55E-06	1.55E-06	---
Ethyl Benzene	100-41-4	---	---	---	---	Ethyl Benzene	100-41-4	---	---	---	---	Ethyl Benzene	100-41-4	---	---	---	---	Ethyl Benzene	100-41-4	---	---	---	---	Ethyl Benzene	100-41-4	---	---	---	---	Ethyl Benzene	100-41-4	---	---	---	---
Formaldehyde	50-00-0	---	---	---	---	Formaldehyde	50-00-0	---	---	---	---	Formaldehyde	50-00-0	---	---	---	---	Formaldehyde	50-00-0	---	---	---	---	Formaldehyde	50-00-0	---	---	---	---	Formaldehyde	50-00-0	2.21E-05	9.66E-05	9.66E-05	---
Hexachlorobutadiene	87-68-3	---	---	---	---	Hexachlorobutadiene	87-68-3	---	---	---	---	Hexachlorobutadiene	87-68-3	---	---	---	---	Hexachlorobutadiene	87-68-3	---	---	---	---	Hexachlorobutadiene	87-68-3	---	---	---	---	Hexachlorobutadiene	87-68-3	---	---	---	---
Hexane	110-54-3	---	---	---	---	Hexane	110-54-3	---	---	---	---	Hexane	110-54-3	---	---	---	---	Hexane	110-54-3	---	---	---	---	Hexane	110-54-3	---	---	---	---	Hexane	110-54-3	5.29E-06	2.32E-05	2.32E-05	---
Manganese	7439-96-5	---	---	---	---	Manganese	7439-96-5	---	---	---	---	Manganese	7439-96-5	---	---	---	---	Manganese	7439-96-5	---	---	---	---	Manganese	7439-96-5	---	---	---	---	Manganese	7439-96-5	1.12E-07	4.90E-07	4.90E-07	---
Mercury	7439-97-6	---	---	---	---	Mercury	7439-97-6	---	---	---	---	Mercury	7439-97-6	---	---	---	---	Mercury	7439-97-6	---	---	---	---	Mercury	7439-97-6	---	---	---	---	Mercury	7439-97-6	7.83E-08	3.33E-07	3.33E-07	---
Methylene Chloride	75-09-02	---	---	---	---	Methylene Chloride	75-09-02	---	---	---	---	Methylene Chloride	75-09-02	---	---	---	---	Methylene Chloride	75-09-02	---	---	---	---	Methylene Chloride	75-09-02	---	---	---	---	Methylene Chloride	75-09-02	---	---	---	---
Methyl tert-butyl ether	1634-04-4	---	---	---	---	Methyl tert-butyl ether	1634-04-4	---	---	---	---	Methyl tert-butyl ether	1634-04-4	---	---	---	---	Methyl tert-butyl ether	1634-04-4	---	---	---	---	Methyl tert-butyl ether	1634-04-4	---	---	---	---	Methyl tert-butyl ether	1634-04-4	---	---	---	---
Naphthalene	91-20-3	---	---	---	---	Naphthalene	91-20-3	---	---	---	---	Naphthalene	91-20-3	---	---	---	---	Naphthalene	91-20-3	---	---	---	---	Naphthalene	91-20-3	---	---	---	---	Naphthalene	91-20-3	1.79E-07	7.86E-07	7.86E-07	---
Nickel	7440-02-0	---	---	---	---	Nickel	7440-02-0	---	---	---	---	Nickel	7440-02-0	---	---	---	---	Nickel	7440-02-0	---	---	---	---	Nickel	7440-02-0	---	---	---	---	Nickel	7440-02-0	5.13E-07	2.71E-06	2.71E-06	---
PAH (not including Naphthalene)		---	---	---	---	PAH (not including Naphthalene)		---	---	---	---	PAH (not including Naphthalene)		---	---	---	---	PAH (not including Naphthalene)		---	---	---	---	PAH (not including Naphthalene)		---	---	---	---	PAH (not including Naphthalene)		---	---	---	---
POM		---	---	---	---	POM		---	---	---	---	POM		---	---	---	---	POM		---	---	---	---	POM		---	---	---	---	POM		2.59E-08	1.14E-07	1.14E-07	---
Propylene	115-07-1	---	---	---	---	Propylene	115-07-1	---	---	---	---	Propylene	115-07-1	---	---	---	---	Propylene	115-07-1	---	---	---	---	Propylene	115-07-1	---	---	---	---	Propylene	115-07-1	---	---	---	---
Selenium	7782-49-2	---	---	---	---	Selenium	7782-49-2	---	---	---	---	Selenium	7782-49-2	---	---	---	---	Selenium	7782-49-2	---	---	---	---	Selenium	7782-49-2	---	---	---	---	Selenium	7782-49-2	7.06E-09	3.09E-08	3.09E-08	---
Styrene	100-42-5	---	---	---	---	Styrene	100-42-5	---	---	---	---	Styrene	100-42-5	---	---	---	---	Styrene	100-42-5	---	---	---	---	Styrene	100-42-5	---	---	---	---	Styrene	100-42-5	---	---	---	---
Tetrachloroethene	127-18-4	---	---	---	---	Tetrachloroethene	127-18-4	---	---	---	---	Tetrachloroethene	127-18-4	---	---	---	---	Tetrachloroethene	127-18-4	---	---	---	---	Tetrachloroethene	127-18-4	---	---	---	---	Tetrachloroethene	127-18-4	---	---	---	---
Toluene	108-88-3	---	---	---	---	Toluene	108-88-3	---	---	---	---	Toluene	108-88-3	---	---	---	---	Toluene	108-88-3	---	---	---	---	Toluene	108-88-3	---	---	---	---	Toluene	108-88-3	1.03E-06	4.23E-06	4.23E-06	---
Trichloroethene	79-01-6	---	---	---	---	Trichloroethene	79-01-6	---	---	---	---	Trichloroethene	79-01-6	---	---	---	---	Trichloroethene	79-01-6	---	---	---	---	Trichloroethene	79-01-6	---	---	---	---	Trichloroethene	79-01-6	---	---	---	---
Vinyl Acetate	108-05-4	---	---	---	---	Vinyl Acetate	108-05-4	---	---	---	---	Vinyl Acetate	108-05-4	---	---	---	---	Vinyl Acetate	108-05-4	---	---	---	---	Vinyl Acetate	108-05-4	---	---	---	---	Vinyl Acetate	108-05-4	---	---	---	---
Vinyl Chloride	75-01-4	---	---	---	---	Vinyl Chloride	75-01-4	---	---	---	---	Vinyl Chloride	75-01-4	---	---	---	---	Vinyl Chloride	75-01-4	---	---	---	---	Vinyl Chloride	75-01-4	---	---	---	---	Vinyl Chloride	75-01-4	---	---	---	---
Xylenes	1330-20-7	---	---	---	---	Xylenes	1330-20-7	---	---	---	---	Xylenes	1330-20-7	---	---	---	---	Xylenes	1330-20-7	---	---	---	---	Xylenes	1330-20-7	---	---	---	---	Xylenes	1330-20-7	---	---	---	---
Total HAPs	NA	1.13E-04	0.05	4.96E-04	---	Total HAPs	NA	2.10E-04	0.05	9.18E-04	---	Total HAPs	NA	3.23E-04	0.09	1.40E-03	---	Total HAPs	NA	3.02E-04	0.01	1.32E-03	---	Total HAPs	NA	1.07E-04	0.00	4.71E-04	---	Total HAPs	NA	5.55E-04	2.43E-03	2.43E-03	---

Alternate Format

GI-07 Spreadsheet

Facility Emmison Summary

Air Quality Permit Program

Doc Type: Permit Application

3a) Delta ID No.:
3b) Tempo SI ID No.: EQUI223
Description: Coining Booth 1

3c) Pollutant Name	3d) CAS #	3e) Potential Lbs per Hr	3e) Potential Unc tpy	3e) Potential Limited tpy	3f) Actual tpy
PM	NA	3.18E-03	0.01	0.01	---
PM10	NA	3.18E-03	0.01	0.01	---
PM2.5	NA	3.18E-03	0.01	0.01	---
SO2	NA	---	---	---	---
NOx	NA	---	---	---	---
CO	NA	---	---	---	---
VOC	NA	---	---	---	---
Lead	NA	---	---	---	---
CO2	NA	---	---	---	---
CH4	NA	---	---	---	---
N2O	NA	---	---	---	---
Total GHG (CO2e)	NA	---	---	---	---
1,1,1-Trichloroethane	71-55-6	---	---	---	---
1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---
1,1,2-Trichloroethane	79-00-5	---	---	---	---
1,1-Dichloroethane	75-34-3	---	---	---	---
1,1-Dichloroethene	75-35-4	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	---	---	---	---
1,2-Dibromoethane	106-93-4	---	---	---	---
1,2-Dichloroethane	107-06-2	---	---	---	---
1,2-Dichloropropane	78-87-5	---	---	---	---
1,4-Dichlorobenzene	106-46-7	---	---	---	---
4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---
Acetaldehyde	75070	---	---	---	---
1,3-Butadiene	106990	---	---	---	---
Arsenic	7440-38-2	---	---	---	---
Benzene	71-43-2	---	---	---	---
Benzyl chloride	100-44-7	---	---	---	---
Bromoform	75-25-2	---	---	---	---
Bromomethane	74-83-9	---	---	---	---
Beryllium	7440-41-7	---	---	---	---
Cadmium	7440-43-9	---	---	---	---
Carbon disulfide	75-15-0	---	---	---	---
Carbon tetrachloride	56-23-5	---	---	---	---
Chromium	7440-47-3	---	---	---	---
Chlorobenzene	108-90-7	---	---	---	---
Chloroethane	75-00-3	---	---	---	---
Chloroform	67-66-3	---	---	---	---
Chloromethane	74-87-2	---	---	---	---
Cobalt	7440-48-4	---	---	---	---
Dichlorobenzene	25321-22-6	---	---	---	---
Ethyl Benzene	100-41-4	---	---	---	---
Formaldehyde	50-00-0	---	---	---	---
Hexachlorobutadiene	87-68-3	---	---	---	---
Hexane	110-54-3	---	---	---	---
Manganese	7439-96-5	---	---	---	---
Mercury	7439-97-6	---	---	---	---
Methylene Chloride	75-09-02	---	---	---	---
Methyl-tert-butyl ether	1634-04-4	---	---	---	---
Naphthalene	91-20-3	---	---	---	---
Nickel	7440-02-0	---	---	---	---
PAH (not including Napthalene)		---	---	---	---
POM		---	---	---	---
Propylene	115-07-1	---	---	---	---
Selenium	7782-49-2	---	---	---	---
Styrene	100-42-5	---	---	---	---
Tetrachloroethene	127-18-4	---	---	---	---
Toluene	108-88-3	---	---	---	---
Trichloroethene	79-01-6	---	---	---	---
Vinyl Acetate	108-05-4	---	---	---	---
Vinyl Chloride	75-01-4	---	---	---	---
Xylenes	1330-20-7	---	---	---	---
Total HAPs	NA	---	---	---	---

3a) Delta ID No.:
3b) Tempo SI ID No.: EQUI228
Description: Coining Booth 6

3c) Pollutant Name	3d) CAS #	3e) Potential Lbs per Hr	3e) Potential Unc tpy	3e) Potential Limited tpy	3f) Actual tpy
PM	NA	3.58E-03	0.02	0.02	---
PM10	NA	3.58E-03	0.02	0.02	---
PM2.5	NA	3.58E-03	0.02	0.02	---
SO2	NA	---	---	---	---
NOx	NA	---	---	---	---
CO	NA	---	---	---	---
VOC	NA	---	---	---	---
Lead	NA	---	---	---	---
CO2	NA	---	---	---	---
CH4	NA	---	---	---	---
N2O	NA	---	---	---	---
Total GHG (CO2e)	NA	---	---	---	---
1,1,1-Trichloroethane	71-55-6	---	---	---	---
1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---
1,1,2-Trichloroethane	79-00-5	---	---	---	---
1,1-Dichloroethane	75-34-3	---	---	---	---
1,1-Dichloroethene	75-35-4	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	---	---	---	---
1,2-Dibromoethane	106-93-4	---	---	---	---
1,2-Dichloroethane	107-06-2	---	---	---	---
1,2-Dichloropropane	78-87-5	---	---	---	---
1,4-Dichlorobenzene	106-46-7	---	---	---	---
4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---
Acetaldehyde	75070	---	---	---	---
1,3-Butadiene	106990	---	---	---	---
Arsenic	7440-38-2	---	---	---	---
Benzene	71-43-2	---	---	---	---
Benzyl chloride	100-44-7	---	---	---	---
Bromoform	75-25-2	---	---	---	---
Bromomethane	74-83-9	---	---	---	---
Beryllium	7440-41-7	---	---	---	---
Cadmium	7440-43-9	---	---	---	---
Carbon disulfide	75-15-0	---	---	---	---
Carbon tetrachloride	56-23-5	---	---	---	---
Chromium	7440-47-3	---	---	---	---
Chlorobenzene	108-90-7	---	---	---	---
Chloroethane	75-00-3	---	---	---	---
Chloroform	67-66-3	---	---	---	---
Chloromethane	74-87-2	---	---	---	---
Cobalt	7440-48-4	---	---	---	---
Dichlorobenzene	25321-22-6	---	---	---	---
Ethyl Benzene	100-41-4	---	---	---	---
Formaldehyde	50-00-0	---	---	---	---
Hexachlorobutadiene	87-68-3	---	---	---	---
Hexane	110-54-3	---	---	---	---
Manganese	7439-96-5	---	---	---	---
Mercury	7439-97-6	---	---	---	---
Methylene Chloride	75-09-02	---	---	---	---
Methyl-tert-butyl ether	1634-04-4	---	---	---	---
Naphthalene	91-20-3	---	---	---	---
Nickel	7440-02-0	---	---	---	---
PAH (not including Napthalene)		---	---	---	---
POM		---	---	---	---
Propylene	115-07-1	---	---	---	---
Selenium	7782-49-2	---	---	---	---
Styrene	100-42-5	---	---	---	---
Tetrachloroethene	127-18-4	---	---	---	---
Toluene	108-88-3	---	---	---	---
Trichloroethene	79-01-6	---	---	---	---
Vinyl Acetate	108-05-4	---	---	---	---
Vinyl Chloride	75-01-4	---	---	---	---
Xylenes	1330-20-7	---	---	---	---
Total HAPs	NA	---	---	---	---

3a) Delta ID No.:
3b) Tempo SI ID No.: EQUI229
Description: Coining Booth 7

3c) Pollutant Name	3d) CAS #	3e) Potential Lbs per Hr	3e) Potential Unc tpy	3e) Potential Limited tpy	3f) Actual tpy
PM	NA	3.00E-03	0.01	0.01	---
PM10	NA	3.00E-03	0.01	0.01	---
PM2.5	NA	3.00E-03	0.01	0.01	---
SO2	NA	---	---	---	---
NOx	NA	---	---	---	---
CO	NA	---	---	---	---
VOC	NA	---	---	---	---
Lead	NA	---	---	---	---
CO2	NA	---	---	---	---
CH4	NA	---	---	---	---
N2O	NA	---	---	---	---
Total GHG (CO2e)	NA	---	---	---	---
1,1,1-Trichloroethane	71-55-6	---	---	---	---
1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---
1,1,2-Trichloroethane	79-00-5	---	---	---	---
1,1-Dichloroethane	75-34-3	---	---	---	---
1,1-Dichloroethene	75-35-4	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	---	---	---	---
1,2-Dibromoethane	106-93-4	---	---	---	---
1,2-Dichloroethane	107-06-2	---	---	---	---
1,2-Dichloropropane	78-87-5	---	---	---	---
1,4-Dichlorobenzene	106-46-7	---	---	---	---
4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---
Acetaldehyde	75070	---	---	---	---
1,3-Butadiene	106990	---	---	---	---
Arsenic	7440-38-2	---	---	---	---
Benzene	71-43-2	---	---	---	---
Benzyl chloride	100-44-7	---	---	---	---
Bromoform	75-25-2	---	---	---	---
Bromomethane	74-83-9	---	---	---	---
Beryllium	7440-41-7	---	---	---	---
Cadmium	7440-43-9	---	---	---	---
Carbon disulfide	75-15-0	---	---	---	---
Carbon tetrachloride	56-23-5	---	---	---	---
Chromium	7440-47-3	---	---	---	---
Chlorobenzene	108-90-7	---	---	---	---
Chloroethane	75-00-3	---	---	---	---
Chloroform	67-66-3	---	---	---	---
Chloromethane	74-87-2	---	---	---	---
Cobalt	7440-48-4	---	---	---	---
Dichlorobenzene	25321-22-6	---	---	---	---
Ethyl Benzene	100-41-4	---	---	---	---
Formaldehyde	50-00-0	---	---	---	---
Hexachlorobutadiene	87-68-3	---	---	---	---
Hexane	110-54-3	---	---	---	---
Manganese	7439-96-5	---	---	---	---
Mercury	7439-97-6	---	---	---	---
Methylene Chloride	75-09-02	---	---	---	---
Methyl-tert-butyl ether	1634-04-4	---	---	---	---
Naphthalene	91-20-3	---	---	---	---
Nickel	7440-02-0	---	---	---	---
PAH (not including Napthalene)		---	---	---	---
POM		---	---	---	---
Propylene	115-07-1	---	---	---	---
Selenium	7782-49-2	---	---	---	---
Styrene	100-42-5	---	---	---	---
Tetrachloroethene	127-18-4	---	---	---	---
Toluene	108-88-3	---	---	---	---
Trichloroethene	79-01-6	---	---	---	---
Vinyl Acetate	108-05-4	---	---	---	---
Vinyl Chloride	75-01-4	---	---	---	---
Xylenes	1330-20-7	---	---	---	---
Total HAPs	NA	---	---	---	---

3a) Delta ID No.:
3b) Tempo SI ID No.: EQUI230
Description: Coining Booth 8

3c) Pollutant Name	3d) CAS #	3e) Potential Lbs per Hr	3e) Potential Unc tpy	3e) Potential Limited tpy	3f) Actual tpy
PM	NA	4.56E-03	0.02	0.02	---
PM10	NA	4.56E-03	0.02	0.02	---
PM2.5	NA	4.56E-03	0.02	0.02	---
SO2	NA	---	---	---	---
NOx	NA	---	---	---	---
CO	NA	---	---	---	---
VOC	NA	---	---	---	---
Lead	NA	---	---	---	---
CO2	NA	---	---	---	---
CH4	NA	---	---	---	---
N2O	NA	---	---	---	---
Total GHG (CO2e)	NA	---	---	---	---
1,1,1-Trichloroethane	71-55-6	---	---	---	---
1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---
1,1,2-Trichloroethane	79-00-5	---	---	---	---
1,1-Dichloroethane	75-34-3	---	---	---	---
1,1-Dichloroethene	75-35-4	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	---	---	---	---
1,2-Dibromoethane	106-93-4	---	---	---	---
1,2-Dichloroethane	107-06-2	---	---	---	---
1,2-Dichloropropane	78-87-5	---	---	---	---
1,4-Dichlorobenzene	106-46-7	---	---	---	---
4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---
Acetaldehyde	75070	---	---	---	---
1,3-Butadiene	106990	---	---	---	---
Arsenic	7440-38-2	---	---	---	---
Benzene	71-43-2	---	---	---	---
Benzyl chloride	100-44-7	---	---	---	---
Bromoform	75-25-2	---	---	---	---
Bromomethane	74-83-9	---	---	---	---
Beryllium	7440-41-7	---	---	---	---
Cadmium	7440-43-9	---	---	---	---
Carbon disulfide	75-15-0	---	---	---	---
Carbon tetrachloride	56-23-5	---	---	---	---
Chromium	7440-47-3	---	---	---	---
Chlorobenzene	108-90-7	---	---	---	---
Chloroethane	75-00-3	---	---	---	---
Chloroform	67-66-3	---	---	---	---
Chloromethane	74-87-2	---	---	---	---
Cobalt	7440-48-4	---	---	---	---
Dichlorobenzene	25321-22-6	---	---	---	---
Ethyl Benzene	100-41-4	---	---	---	---
Formaldehyde	50-00-0	---	---	---	---
Hexachlorobutadiene	87-68-3	---	---	---	---
Hexane	110-54-3	---	---	---	---
Manganese	7439-96-5	---	---	---	---
Mercury	7439-97-6	---	---	---	---
Methylene Chloride	75-09-02	---	---	---	---
Methyl-tert-butyl ether	1634-04-4	---	---	---	---
Naphthalene	91-20-3	---	---	---	---
Nickel	7440-02-0	---	---	---	---
PAH (not including Napthalene)		---	---	---	---
POM		---	---	---	---
Propylene	115-07-1	---	---	---	---
Selenium	7782-49-2	---	---	---	---
Styrene	100-42-5	---	---	---	---
Tetrachloroethene	127-18-4	---	---	---	---
Toluene	108-88-3	---	---	---	---
Trichloroethene	79-01-6	---	---	---	---
Vinyl Acetate	108-05-4	---	---	---	---
Vinyl Chloride	75-01-4	---	---	---	---
Xylenes	1330-20-7	---	---	---	---
Total HAPs	NA	---	---	---	---

3a) Delta ID No.:
3b) Tempo SI ID No.: EQUI231
Description: Coining Booth 9

3c) Pollutant Name	3d) CAS #	3e) Potential Lbs per Hr	3e) Potential Unc tpy	3e) Potential Limited tpy	3f) Actual tpy
PM	NA	0.01	0.05	0.05	---
PM10	NA	0.01	0.05	0.05	---
PM2.5	NA	0.01	0.05	0.05	---
SO2	NA	---	---	---	---
NOx	NA	---	---	---	---
CO	NA	---	---	---	---
VOC	NA	---	---	---	---
Lead	NA	---	---	---	---
CO2	NA	---	---	---	---
CH4	NA	---	---	---	---
N2O	NA	---	---	---	---
Total GHG (CO2e)	NA	---	---	---	---
1,1,1-Trichloroethane	71-55-6	---	---	---	---
1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---
1,1,2-Trichloroethane	79-00-5	---	---	---	---
1,1-Dichloroethane	75-34-3	---	---	---	---
1,1-Dichloroethene	75-35-4	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	---	---	---	---
1,2-Dibromoethane	106-93-4	---	---	---	---
1,2-Dichloroethane	107-06-2	---	---	---	---
1,2-Dichloropropane	78-87-5	---	---	---	---
1,4-Dichlorobenzene	106-46-7	---	---	---	---
4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---
Acetaldehyde	75070	---	---	---	---
1,3-Butadiene	106990	---	---	---	---
Arsenic	7440-38-2	---	---	---	---
Benzene	71-43-2	---	---	---	---
Benzyl chloride	100-44-7	---	---	---	---
Bromoform	75-25-2	---	---	---	---
Bromomethane	74-83-9	---	---	---	---
Beryllium	7440-41-7	---	---	---	---
Cadmium	7440-43-9	---	---	---	---
Carbon disulfide	75-15-0	---	---	---	---
Carbon tetrachloride	56-23-5	---	---	---	---
Chromium	7440-47-3	---	---	---	---
Chlorobenzene	108-90-7	---	---	---	---
Chloroethane	75-00-3	---	---	---	---
Chloroform	67-66-3	---	---	---	---
Chloromethane	74-87-2	---	---	---	---
Cobalt	7440-48-4	---	---	---	---
Dichlorobenzene	25321-22-6	---	---	---	---
Ethyl Benzene	100-41-4	---	---	---	---
Formaldehyde	50-00-0	---	---	---	---
Hexachlorobutadiene	87-68-3	---	---	---	---
Hexane	110-54-3	---	---	---	---
Manganese	7439-96-5	---	---	---	---
Mercury	7439-97-6	---	---	---	---
Methylene Chloride	75-09-02	---	---	---	---
Methyl-tert-butyl ether	1634-04-4	---	---	---	---
Naphthalene	91-20-3	---	---	---	---
Nickel	7440-02-0	---	---	---	---
PAH (not including Napthalene)		---	---	---	---
POM		---	---	---	---
Propylene	115-07-1	---	---	---	---
Selenium	7782-49-2	---	---	---	---
Styrene	100-42-5	---	---	---	---
Tetrachloroethene	127-18-4	---	---	---	---
Toluene	108-88-3	---	---	---	---
Trichloroethene	79-01-6	---	---	---	---
Vinyl Acetate	108-05-4	---	---	---	---
Vinyl Chloride	75-01-4	---	---	---	---
Xylenes	1330-20-7	---	---	---	---
Total HAPs	NA	---	---	---	---

3a) Delta ID No.:
3b) Tempo SI ID No.: EQUI232
Description: Coining Booth 10

3c) Pollutant Name	3d) CAS #	3e) Potential Lbs per Hr	3e) Potential Unc tpy	3e) Potential Limited tpy	3f) Actual tpy
PM	NA	7.97E-03	0.03	0.03	---
PM10	NA	7.97E-03	0.03	0.03	---
PM2.5	NA	7.97E-03	0.03	0.03	---
SO2	NA	---	---	---	---
NOx	NA	---	---	---	---
CO	NA	---	---	---	---
VOC	NA	---	---	---	---
Lead	NA	---	---	---	---
CO2	NA	---	---	---	---
CH4	NA	---	---	---	---
N2O	NA	---	---	---	---
Total GHG (CO2e)	NA	---	---	---	---
1,1,1-Trichloroethane	71-55-6	---	---	---	---
1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---
1,1,2-Trichloroethane	79-00-5	---	---	---	---
1,1-Dichloroethane	75-34-3	---	---	---	---
1,1-Dichloroethene	75-35-4	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	---	---	---	---
1,2-Dibromoethane	106-93-4	---	---	---	---
1,2-Dichloroethane	107-06-2	---	---	---	---
1,2-Dichloropropane	78-87-5	---	---	---	---
1,4-Dichlorobenzene	106-46-7	---	---	---	---
4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---
Acetaldehyde	75070	---	---	---	---
1,3-Butadiene	106990	---	---	---	---
Arsenic	7440-38-2	---	---	---	---
Benzene	71-43-2	---	---	---	---
Benzyl chloride	100-44-7	---	---	---	---
Bromoform	75-25-2	---	---	---	---
Bromomethane	74-83-9	---	---	---	---
Beryllium	7440-41-7	---	---	---	---
Cadmium	7440-43-9	---	---	---	---
Carbon disulfide	75-15-0	---	---	---	---
Carbon tetrachloride	56-23-5	---	---	---	---
Chromium	7440-47-3	---	---	---	---
Chlorobenzene	108-90-7	---	---	---	---
Chloroethane	75-00-3	---	---	---	---
Chloroform	67-66-3	---	---	---	---
Chloromethane	74-87-2	---	---	---	---
Cobalt	7440-48-4	---	---	---	---
Dichlorobenzene	25321-22-6	---	---	---	---
Ethyl Benzene	100-41-4	---	---	---	---
Formaldehyde	50-00-0	---	---	---	---
Hexachlorobutadiene	87-68-3	---	---	---	---
Hexane	110-54-3	---	---	---	---
Manganese	7439-96-5	---	---	---	---
Mercury	7439-97-6	---	---	---	---
Methylene Chloride	75-09-02	---	---	---	---
Methyl-tert-butyl ether	1634-04-4	---	---	---	---
Naphthalene	91-20-3	---	---	---	---
Nickel	7440-02-0	---	---	---	---
PAH (not including Napthalene)		---	---	---	---
POM		---	---	---	---
Propylene	115-07-1	---	---	---	---
Selenium	7782-49-2	---	---	---	---
Styrene	100-42-5	---	---	---	---
Tetrachloroethene	127-18-4	---	---	---	---
Toluene	108-88-3	---	---	---	---
Trichloroethene	79-01-6	---	---	---	---
Vinyl Acetate	108-05-4	---	---	---	---
Vinyl Chloride	75-01-4	---	---	---	---
Xylenes	1330-20-7	---	---	---	---
Total HAPs	NA	---	---	---	---

3a) Delta ID No.:
3b) Tempo SI ID No.:
Description: IA Parts Washers

3c) Pollutant Name	3d) CAS #	3e) Potential Lbs per Hr	3e) Potential Unc tpy	3e) Potential Limited tpy	3f) Actual tpy
PM	NA	---	---	---	---
PM10	NA	---	---	---	---
PM2.5	NA	---	---	---	---
SO2	NA	---	---	---	---
NOx	NA	---	---	---	---
CO	NA	---	---	---	---
VOC	NA	0.21	0.93	0.93	---
Lead	NA	---	---	---	---
CO2	NA	---	---	---	---
CH4	NA	---	---	---	---
N2O	NA	---	---	---	---
Total GHG (CO2e)	NA	---	---	---	---
1,1,1-Trichloroethane	71-55-6	---	---	---	---
1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---
1,1,2-Trichloroethane	79-00-5	---	---	---	---
1,1-Dichloroethane	75-34-3	---	---	---	---
1,1-Dichloroethene	75-35-4	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	---	---	---	---
1,2-Dibromoethane	106-93-4	---	---	---	---
1,2-Dichloroethane	107-06-2	---	---	---	---
1,2-Dichloropropane	78-87-5	---	---	---	---
1,4-Dichlorobenzene	106-46-7	---	---	---	---
4-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---
Acetaldehyde	75070	---	---	---	---
1,3-Butadiene	106990	---	---	---	---
Arsenic	7440-38-2	---	---	---	---
Benzene	71-43-2	---	---	---	---
Benzyl chloride	100-44-7	---	---	---	---
Bromoform	75-25-2	---	---	---	---
Bromomethane	74-83-9	---	---	---	---
Beryllium	7440-41-7	---	---	---	---
Cadmium	7440-43-9	---	---	---	---
Carbon disulfide	75-15-0	---	---	---	---
Carbon tetrachloride	56-23-5	---	---	---	---
Chromium	7440-47-3	---	---	---	---
Chlorobenzene	108-90-7	---	---	---	---
Chloroethane	75-00-3	---	---	---	---
Chloroform	67-66-3	---	---	---	---
Chloromethane	74-87-2	---	---	---	---
Cobalt	7440-48-4	---	---	---	---
Dichlorobenzene	25321-22-6	---	---	---	---
Ethyl Benzene	100-41-4	---	---	---	---
Formaldehyde	50-00-0	---	---	---	---
Hexachlorobutadiene	87-68-3	---	---	---	---
Hexane	110-54-3	---	---	---	---
Manganese	7439-96-5	---	---	---	---
Mercury	7439-97-6	---	---	---	---
Methylene Chloride	75-09-02	---	---	---	---
Methyl-tert-butyl ether	1634-04-4	---	---	---	---
Naphthalene	91-20-3	---	---	---	---
Nickel	7440-02-0	---	---	---	---
PAH (not including Napthalene)		---	---	---	---
POM		---	---	---	---
Propylene	115-07-1	---	---	---	---
Selenium	7782-49-2	---	---	---	---
Styrene	100-42-5	---	---	---	---
Tetrachloroethene	127-18-4	---	---	---	---
Toluene	108-88-3	---	---	---	---
Trichloroethene	79-01-6	---	---	---	---
Vinyl Acetate	108-05-4	---	---	---	---
Vinyl Chloride	75-01-4	---	---	---	---
Xylenes	1330-20-7	---	---	---	---
Total HAPs	NA	---	---	---	---

3a) Delta ID No.:
3b) Tempo SI ID No.: FUGI 1
Description: Cooling Tow

3c) Pollutant Name	3d) CAS #	Lbs per Hr
PM	NA	0.75
PM10	NA	0.15
PM2.5	NA	1.13E-03
SO2	NA	---
NOx	NA	---
CO	NA	---
VOC	NA	---
Lead	NA	---
CO2	NA	---
CH4	NA	---
N2O	NA	---
Total GHG (CO2e)	NA	---
1,1,1-Trichloroethane	71-55-6	---
1,1,2,2-Tetrachloroethane	79-34-5	---
1,1,2-Trichloroethane	79-00-5	---
1,1-Dichloroethane	75-34-3	---
1,1-Dichloroethene	75-35-4	---
1,2,4-Trichlorobenzene	120-82-1	---
1,2-Dibromoethane	106-93-4	---
1,2-Dichloroethane	107-06-2	---
1,2-Dichloropropane	78-87-5	---
1,4-Dichlorobenzene	106-46-7	---
4-Methyl-2-pentanone(MIBK)	108-10-1	---
Acetaldehyde	75070	---
1,3-Butadiene	106990	---
Arsenic	7440-38-2	---
Benzene	71-43-2	---
Benzyl chloride	100-44-7	---
Bromoform	75-25-2	---
Bromomethane	74-83-9	---
Beryllium	7440-41-7	---
Cadmium	7440-43-9	---
Carbon disulfide	75-15-0	---
Carbon tetrachloride	56-23-5	---
Chromium	7440-47-3	---
Chlorobenzene	108-90-7	---
Chloroethane	75-00-3	---
Chloroform	67-66-3	---
Chloromethane	74-87-2	---
Cobalt	7440-48-4	---
Dichlorobenzene	25321-22-6	---
Ethyl Benzene	100-41-4	---
Formaldehyde	50-00-0	---
Hexachlorobutadiene	87-68-3	---
Hexane	110-54-3	---
Manganese	7439-96-5	---
Mercury	7439-97-6	---
Methylene Chloride	75-09-02	---
Methyl-tert-butyl ether	1634-04-4	---
Naphthalene	91-20-3	---
Nickel	7440-02-0	---
PAH (not including Napthalene)		---
POM		---
Propylene	115-07-1	---
Selenium	7782-49-2	---
Styrene	100-42-5	---
Tetrachloroethene	127-18-4	---
Toluene	108-88-3	---
Trichloroethene	79-01-6	---
Vinyl Acetate	108-05-4	---
Vinyl Chloride	75-01-4	---
Xylenes	1330-20-7	---
Total HAPs	NA	---

Alternate Format

GI-07 Spreadsheet

Facility Emmison Summary

Air Quality Permit Program

Doc Type: Permit Application

			3a) Delta ID No.:						3a) Delta ID No.:						3a) Delta ID No.:						3a) Delta ID No.:						3a) Delta ID No.:					
			3b) Tempo SI ID No.:						3b) Tempo SI ID No.:						3b) Tempo SI ID No.:						3b) Tempo SI ID No.:						3b) Tempo SI ID No.:					
er 1			Description						Description						Description						Description						Description					
3a) Potential						3a) Potential						3a) Potential						3a) Potential						3a) Potential						3a) Potential			
Unc tpy	Limited tpy	Actual tpy	3c) Pollutant Name	3d) CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy	3c) Pollutant Name	3d) CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy	3c) Pollutant Name	3d) CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy	3c) Pollutant Name	3d) CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy	3c) Pollutant Name	3d) CAS #	Lbs per Hr	Unc tpy	Limited tpy	Actual tpy
2.27	2.27	---	PM	NA	0.75	2.27	2.27	---	PM	NA	0.18	0.81	0.81	---	PM	NA	0.75	2.27	2.27	---	PM	NA	---	---	---	---	PM	NA	---	---	---	---
0.68	0.68	---	PM10	NA	0.33	0.68	0.68	---	PM10	NA	0.03	0.12	0.12	---	PM10	NA	0.15	0.68	0.68	---	PM10	NA	---	---	---	---	PM10	NA	---	---	---	---
4.97E-03	4.97E-03	---	PM2.5	NA	1.13E-03	4.97E-03	4.97E-03	---	PM2.5	NA	0.01	0.03	0.03	---	PM2.5	NA	1.13E-03	4.97E-03	4.97E-03	---	PM2.5	NA	---	---	---	---	PM2.5	NA	---	---	---	---
---	---	---	SO2	NA	---	---	---	---	SO2	NA	---	---	---	---	SO2	NA	---	---	---	---	SO2	NA	---	---	---	---	SO2	NA	---	---	---	---
---	---	---	NOx	NA	---	---	---	---	NOx	NA	---	---	---	---	NOx	NA	---	---	---	---	NOx	NA	---	---	---	---	NOx	NA	---	---	---	---
---	---	---	CO	NA	---	---	---	---	CO	NA	---	---	---	---	CO	NA	---	---	---	---	CO	NA	---	---	---	---	CO	NA	---	---	---	---
---	---	---	VOC	NA	---	---	---	---	VOC	NA	---	---	---	---	VOC	NA	---	---	---	---	VOC	NA	0.23	1.02	1.02	---	VOC	NA	9.85E-04	4.32E-03	4.32E-03	---
---	---	---	Lead	NA	---	---	---	---	Lead	NA	---	---	---	---	Lead	NA	---	---	---	---	Lead	NA	---	---	---	---	Lead	NA	---	---	---	---
---	---	---	CO2	NA	---	---	---	---	CO2	NA	---	---	---	---	CO2	NA	---	---	---	---	CO2	NA	---	---	---	---	CO2	NA	---	---	---	---
---	---	---	CH4	NA	---	---	---	---	CH4	NA	---	---	---	---	CH4	NA	---	---	---	---	CH4	NA	---	---	---	---	CH4	NA	---	---	---	---
---	---	---	N2O	NA	---	---	---	---	N2O	NA	---	---	---	---	N2O	NA	---	---	---	---	N2O	NA	---	---	---	---	N2O	NA	---	---	---	---
---	---	---	Total GHG (CO2e)	NA	---	---	---	---	Total GHG (CO2e)	NA	---	---	---	---	Total GHG (CO2e)	NA	---	---	---	---	Total GHG (CO2e)	NA	---	---	---	---	Total GHG (CO2e)	NA	---	---	---	---
---	---	---	1,1,2-Trichloroethane	79-00-5	---	---	---	---	1,1,2-Trichloroethane	79-00-5	---	---	---	---	1,1,2-Trichloroethane	79-00-5	---	---	---	---	1,1,2-Trichloroethane	79-00-5	---	---	---	---	1,1,2-Trichloroethane	79-00-5	---	---	---	---
---	---	---	1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---	1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---	1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---	1,1,2,2-Tetrachloroethane	79-34-5	---	---	---	---	1,1,2,2-Tetrachloroethane	79-34-5	6.25E-06	2.74E-05	2.74E-05	---
---	---	---	1,1,2-Trichloroethane	79-00-5	---	---	---	---	1,1,2-Trichloroethane	79-00-5	---	---	---	---	1,1,2-Trichloroethane	79-00-5	---	---	---	---	1,1,2-Trichloroethane	79-00-5	---	---	---	---	1,1,2-Trichloroethane	79-00-5	2.42E-06	1.06E-05	1.06E-05	---
---	---	---	1,1-Dichloroethane	75-34-3	---	---	---	---	1,1-Dichloroethane	75-34-3	---	---	---	---	1,1-Dichloroethane	75-34-3	---	---	---	---	1,1-Dichloroethane	75-34-3	---	---	---	---	1,1-Dichloroethane	75-34-3	3.64E-06	1.60E-05	1.60E-05	---
---	---	---	1,1-Dichloroethene	75-35-4	---	---	---	---	1,1-Dichloroethene	75-35-4	---	---	---	---	1,1-Dichloroethene	75-35-4	---	---	---	---	1,1-Dichloroethene	75-35-4	---	---	---	---	1,1-Dichloroethene	75-35-4	3.64E-06	1.60E-05	1.60E-05	---
---	---	---	1,2,4-Trichlorobenzene	120-82-1	---	---	---	---	1,2,4-Trichlorobenzene	120-82-1	---	---	---	---	1,2,4-Trichlorobenzene	120-82-1	---	---	---	---	1,2,4-Trichlorobenzene	120-82-1	---	---	---	---	1,2,4-Trichlorobenzene	120-82-1	3.31E-05	1.45E-04	1.45E-04	---
---	---	---	1,2-Dibromoethane	106-93-4	---	---	---	---	1,2-Dibromoethane	106-93-4	---	---	---	---	1,2-Dibromoethane	106-93-4	---	---	---	---	1,2-Dibromoethane	106-93-4	---	---	---	---	1,2-Dibromoethane	106-93-4	3.39E-06	1.48E-05	1.48E-05	---
---	---	---	1,2-Dichloroethane	107-06-2	---	---	---	---	1,2-Dichloroethane	107-06-2	---	---	---	---	1,2-Dichloroethane	107-06-2	---	---	---	---	1,2-Dichloroethane	107-06-2	---	---	---	---	1,2-Dichloroethane	107-06-2	3.64E-06	1.60E-05	1.60E-05	---
---	---	---	1,2-Dichloropropane	78-87-5	---	---	---	---	1,2-Dichloropropane	78-87-5	---	---	---	---	1,2-Dichloropropane	78-87-5	---	---	---	---	1,2-Dichloropropane	78-87-5	---	---	---	---	1,2-Dichloropropane	78-87-5	4.17E-06	1.82E-05	1.82E-05	---
---	---	---	1,3-Dichlorobenzene	106-46-7	---	---	---	---	1,3-Dichlorobenzene	106-46-7	---	---	---	---	1,3-Dichlorobenzene	106-46-7	---	---	---	---	1,3-Dichlorobenzene	106-46-7	---	---	---	---	1,3-Dichlorobenzene	106-46-7	1.33E-05	5.82E-05	5.82E-05	---
---	---	---	2-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---	2-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---	2-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---	2-Methyl-2-pentanone(MIBK)	108-10-1	---	---	---	---	2-Methyl-2-pentanone(MIBK)	108-10-1	1.82E-01	7.98E-05	7.98E-05	---
---	---	---	Acetaldehyde	75070	---	---	---	---	Acetaldehyde	75070	---	---	---	---	Acetaldehyde	75070	---	---	---	---	Acetaldehyde	75070	---	---	---	---	Acetaldehyde	75070	---	---	---	---
---	---	---	1,3-Butadiene	1024890	---	---	---	---	1,3-Butadiene	1024890	---	---	---	---	1,3-Butadiene	1024890	---	---	---	---	1,3-Butadiene	1024890	---	---	---	---	1,3-Butadiene	1024890	1.99E-06	8.67E-06	8.67E-06	---
---	---	---	Arsenic	7440-38-2	---	---	---	---	Arsenic	7440-38-2	---	---	---	---	Arsenic	7440-38-2	---	---	---	---	Arsenic	7440-38-2	---	---	---	---	Arsenic	7440-38-2	---	---	---	---
---	---	---	Benzene	71-43-2	---	---	---	---	Benzene	71-43-2	---	---	---	---	Benzene	71-43-2	---	---	---	---	Benzene	71-43-2	---	---	---	---	Benzene	71-43-2	1.43E-06	6.27E-06	6.27E-06	---
---	---	---	Benzyl chloride	100-44-7	---	---	---	---	Benzyl chloride	100-44-7	---	---	---	---	Benzyl chloride	100-44-7	---	---	---	---	Benzyl chloride	100-44-7	---	---	---	---	Benzyl chloride	100-44-7	1.15E-05	5.02E-05	5.02E-05	---
---	---	---	Biphenyl	92-52-4	---	---	---	---	Biphenyl	92-52-4	---	---	---	---	Biphenyl	92-52-4	---	---	---	---	Biphenyl	92-52-4	---	---	---	---	Biphenyl	92-52-4	1.04E-06	4.56E-06	4.56E-06	---
---	---	---	Bromoform	75-25-2	---	---	---	---	Bromoform	75-25-2	---	---	---	---	Bromoform	75-25-2	---	---	---	---	Bromoform	75-25-2	---	---	---	---	Bromoform	75-25-2	2.29E-06	1.00E-05	1.00E-05	---
---	---	---	Bromomethane	74-83-9	---	---	---	---	Bromomethane	74-83-9	---	---	---	---	Bromomethane	74-83-9	---	---	---	---	Bromomethane	74-83-9	---	---	---	---	Bromomethane	74-83-9	3.39E-06	1.48E-05	1.48E-05	---
---	---	---	Beryllium	7440-41-7	---	---	---	---	Beryllium	7440-41-7	---	---	---	---	Beryllium	7440-41-7	---	---	---	---	Beryllium	7440-41-7	---	---	---	---	Beryllium	7440-41-7	---	---	---	---
---	---	---	Cadmium	7440-43-9	---	---	---	---	Cadmium	7440-43-9	---	---	---	---	Cadmium	7440-43-9	---	---	---	---	Cadmium	7440-43-9	---	---	---	---	Cadmium	7440-43-9	---	---	---	---
---	---	---	Carbon disulfide	75-15-0	---	---	---	---	Carbon disulfide	75-15-0	---	---	---	---	Carbon disulfide	75-15-0	---	---	---	---	Carbon disulfide	75-15-0	---	---	---	---	Carbon disulfide	75-15-0	2.86E-06	1.25E-05	1.25E-05	---
---	---	---	Carbon tetrachloride	56-23-5	---	---	---	---	Carbon tetrachloride	56-23-5	---	---	---	---	Carbon tetrachloride	56-23-5	---	---	---	---	Carbon tetrachloride	56-23-5	---	---	---	---	Carbon tetrachloride	56-23-5	5.73E-06	2.51E-05	2.51E-05	---
---	---	---	Chromium	7440-47-3	---	---	---	---	Chromium	7440-47-3	---	---	---	---	Chromium	7440-47-3	---	---	---	---	Chromium	7440-47-3	---	---	---	---	Chromium	7440-47-3	---	---	---	---
---	---	---	Chlorobenzene	108-90-7	---	---	---	---	Chlorobenzene	108-90-7	---	---	---	---	Chlorobenzene	108-90-7	---	---	---	---	Chlorobenzene	108-90-7	---	---	---	---	Chlorobenzene	108-90-7	4.17E-06	1.82E-05	1.82E-05	---
---	---	---	Chloroethane	75-00-3	---	---	---	---	Chloroethane	75-00-3	---	---	---	---	Chloroethane	75-00-3	---	---	---	---	Chloroethane	75-00-3	---	---	---	---	Chloroethane	75-00-3	2.34E-06	1.03E-05	1.03E-05	---
---	---	---	Chloroform	67-66-3	---	---	---	---	Chloroform	67-66-3	---	---	---	---	Chloroform	67-66-3	---	---	---	---	Chloroform	67-66-3	---	---	---	---	Chloroform	67-66-3	2.21E-06	9.68E-06	9.68E-06	---
---	---	---	Chloromethane	74-87-3	---	---	---	---	Chloromethane	74-87-3	---	---	---	---	Chloromethane	74-87-3	---	---	---	---	Chloromethane	74-87-3	---	---	---	---	Chloromethane	74-87-3	3.90E-06	1.71E-05	1.71E-05	---
---	---	---	Cobalt	7440-48-4	---	---	---	---	Cobalt	7440-48-4	---	---	---	---	Cobalt	7440-48-4	---	---	---	---	Cobalt	7440-48-4	---	---	---	---	Cobalt	7440-48-4	---	---	---	---
---	---	---	Dichlorodifluoromethane	25321-22-6	---	---	---	---	Dichlorodifluoromethane	25321-22-6	---	---	---	---	Dichlorodifluoromethane	25321-22-6	---	---	---	---	Dichlorodifluoromethane	25321-22-6	---	---	---	---	Dichlorodifluoromethane	25321-22-6	2.66E-05	1.16E-04	1.16E-04	---
---	---	---	Ethyl Benzene	100-41-4	---	---	---	---	Ethyl Benzene	100-41-4	---	---	---	---	Ethyl Benzene	100-41-4	---	---	---	---	Ethyl Benzene	100-41-4	---	---	---	---	Ethyl Benzene	100-41-4	1.12E-05	4.90E-05	4.90E-05	---
---	---	---	Formaldehyde	50-00-0	---	---	---	---	Formaldehyde	50-00-0	---	---	---	---	Formaldehyde	50-00-0	---	---	---	---	Formaldehyde	50-00-0	---	---	---	---	Formaldehyde	50-00-0	---	---	---	---
---	---	---	Hexachlorobenzene	87-68-3	---	---	---	---	Hexachlorobenzene	87-68-3	---	---	---	---	Hexachlorobenzene	87-68-3	---	---	---	---	Hexachlorobenzene	87-68-3	---	---	---	---	Hexachlorobenzene	87-68-3	2.37E-06	1.04E-05	1.04E-05	---
---	---	---	Hexane	110-54-3	---	---	---	---	Hexane	110-54-3	---	---	---	---	Hexane	110-54-3	---	---	---	---	Hexane	110-54-3	---	---	---	---	Hexane	110-54-3	3.12E-05	1.37E-04	1.37E-04	---
---	---	---	Manganese	7439-96-5	---	---	---	---	Manganese	7439-96-5	---	---	---	---	Manganese	7439-96-5	---	---	---	---	Manganese	7439-96-5	---	---	---	---	Manganese	7439-96-5	---	---	---	---
---	---	---	Mercury	7439-97-6	---	---	---	---	Mercury	7439-97-6	---	---	---	---	Mercury	7439-97-6	---	---	---	---	Mercury	7439-97-6	---	---	---	---	Mercury	7439-97-6	---	---	---	---
---	---	---	Methylene Chloride	75-09-2	---	---	---	---	Methylene Chloride	75-09-2	---	---	---	---	Methylene Chloride	75-09-2	---	---	---	---	Methylene Chloride	75-09-2	---	---	---	---	Methylene Chloride	75-09-2	1.54E-02	6.73E-05	6.73E-05	---
---	---	---	Methyl tert-butyl ether	1634-04-4	---	---	---	---	Methyl tert-butyl ether	1634-04-4	---	---	---	---	Methyl tert-butyl ether	1634-04-4	---	---	---	---	Methyl tert-butyl ether	1634-04-4	---	---	---	---	Methyl tert-butyl ether	1634-04-4	1.59E-05	6.96E-05	6.96E-05	---
---	---	---	Naphthalene	91-20-3	---	---	---	---	Naphthalene	91-20-3	---	---	---	---	Naphthalene	91-20-3	---	---	---	---	Naphthalene	91-20-3	---	---	---	---	Naphthalene	91-20-3	1.17E-05	5.13E-05	5.13E-05	---
---	---	---	Nickel	7440-02-0	---	---	---	---	Nickel	7440-02-0	---	---	---	---	Nickel	7440-02-0	---	---	---	---	Nickel	7440-02-0	---	---	---	---	Nickel	7440-02-0	---	---	---	---
---	---	---	PAH (not including Naphthalene)		---	---	---	---	PAH (not including Naphthalene)		---	---	---	---	PAH (not including Naphthalene)		---	---	---	---	PAH (not including Naphthalene)		---	---	---	---	PAH (not including Naphthalene)		---	---	---	---
---	---	---	POM		---	---	---	---	POM		---	---	---	---	POM		---	---	---	---	POM		---	---	---	---	POM		---	---	---	---
---	---	---	Propylene	115-07-1	---	---	---	---	Propylene	115-07-1	---	---	---	---	Propylene	115-07-1	---	---	---	---	Propylene	115-07-1	---	---	---	---	Propylene	115-07-1	3.90E-05	1.71E-05	1.71E-05	---
---	---	---	Selenium	7782-49-2	---	---	---	---	Selenium	7782-49-2	---	---	---	---	Selenium	7782-49-2	---	---	---	---	Selenium	7782-49-2	---	---	---	---	Selenium	7782-49-2	---	---	---	---
---	---	---	Styrene	100-42-5	---	---	---	---	Styrene	100-42-5	---	---	---	---	Styrene	100-42-5	---	---	---	---	Styrene	100-42-5	---	---	---	---	Styrene	100-42-5	3.90E-05	1.71E-05	1.71E-05	---
---	---	---	Tetrachloroethene	127-18-4	---	---	---	---	Tetrachloroethene	127-18-4	---	---	---	---	Tetrachloroethene	127-18-4	---	---	---	---	Tetrachloroethene	127-18-4	---	---	---	---	Tetrachloroethene	127-18-4	3.64E-06	1.60E-05	1.60E-05	---
---	---	---	Toluene	108-88-3	---	---	---	---	Toluene	108-88-3	---	---	---	---	Toluene	108-88-3	---	---	---	---	Toluene	108-88-3	---	---	---	---	Toluene	108-88-3	3.39E-06	1.48E-05	1.48E-05	---
---	---	---	Trichloroethene	79-01-6	---	---	---	---	Trichloroethene	79-01-6	---	---	---	---	Trichloroethene	79-01-6	---	---	---	---	Trichloroethene	79-01-6	---	---	---	---	Trichloroethene	79-01-6	2.29E-05	1.05E-04	1.05E-04	---
---	---	---	Vinyl Acetate	108-05-4	---	---	---	---	Vinyl Acetate	108-05-4	---	---	---	---	Vinyl Acetate	108-05-4	---	---	---	---	Vinyl Acetate	108-05-4	---	---	---	---	Vinyl Acetate	108-05-4	1.15E-05	5.03E-05	5.03E-05	---
---	---	---	Vinyl Chloride	75-01-4	---	---	---	---	Vinyl Chloride	75-01-4	---	---	---	---	Vinyl Chloride	75-01-4	---	---	---	---	Vinyl Chloride	75-01-4	---	---	---	---	Vinyl Chloride	75-01-4	1.15E-05	5.03E-05	5.03E-05	---
---	---	---	Xylenes	1330-20-7	---	---	---	---	Xylenes	1330-20-7	---	---	---	---	Xylenes	1330-20-7	---	---	---	---	Xylenes	1330-20-7	---	---	---	---	Xylenes	1330-20-7	2.84E-05	1.24E-04	1.24E-04	---
---	---	---	Total HAPs	NA	---	---	---	---	Total HAPs	NA	---	---	---	---	Total HAPs	NA	---	---	---	---	Total HAPs	NA	---	---	---	---	Total HAPs	NA	3.16E-04	1.39E-03	1.39E-03	---

Alternate Format

GI-07 Spreadsheet

Facility Emmison Summary

Air Quality Permit Program

Doc Type: Permit Application

Emissions Summary Table

4a)	4b)	4c) Potential (tons/year)		4d) Actual
Pollutant Name	Potential (lb/hr)	Unrestricted	Limited	tons/year
PM	3.65	266.86	16.72	---
PM10	1.97	196.44	7.59	---
PM2.5	1.48	194.32	5.41	---
SO2	0.19	0.16	0.15	---
NOx	7.13	20.99	19.83	---
CO	4.64	17.24	16.07	---
VOC	123.01	637.96	93.10	---
Lead	5.77E-03	1.66	0.02	---
CO2	5644.00	24538.14	22664.03	---
CH4	0.11	0.66	0.63	---
N2O	0.01	0.05	0.04	---
Total GHG (CO2e)	5650.05	24553.27	22688.35	---
1,1,1-Trichloroethane	4.95E-06	2.17E-05	2.17E-05	---
1,1,2,2-Tetrachloroethane	6.25E-06	2.74E-05	2.74E-05	---
1,1,2-Trichloroethane	2.42E-06	1.06E-05	1.06E-05	---
1,1-Dichloroethane	3.64E-06	1.60E-05	1.60E-05	---
1,1-Dichloroethene	3.64E-06	1.60E-05	1.60E-05	---
1,2,4-Trichlorobenzene	3.31E-05	1.45E-04	1.45E-04	---
1,2-Dibromoethane	3.38E-06	1.48E-05	1.48E-05	---
1,2-Dichloroethane	3.64E-06	1.60E-05	1.60E-05	---
1,2-Dichloropropane	4.17E-06	1.83E-05	1.83E-05	---
1,4-Dichlorobenzene	1.33E-05	5.82E-05	5.82E-05	---
2-Methyl-2-pentanone(MIBK)	1.81E-05	7.98E-05	7.98E-05	---
Acetaldehyde	4.47E-04	1.13E-04	1.13E-04	---
1,3-Butadiene	2.49E-06	1.44E-05	1.44E-05	---
Arsenic	9.30E-06	4.07E-05	3.85E-05	---
Benzene	6.43E-04	5.73E-04	5.61E-04	---
Benzyl chloride	1.15E-05	5.03E-05	5.03E-05	---
Beryllium	2.29E-05	1.00E-04	1.00E-04	---
Bromoform	3.38E-06	1.48E-05	1.48E-05	---
Benz/Ben	5.51E-07	2.41E-06	2.23E-06	---
Cadmium	5.13E-05	2.24E-04	2.09E-04	---
Carbon disulfide	2.85E-06	1.25E-05	1.25E-05	---
Carbon tetrachloride	5.73E-06	2.51E-05	2.51E-05	---
Chromium	8.51E-05	2.91E-04	2.66E-04	---
Chlorobenzene	4.17E-06	1.82E-05	1.82E-05	---
Chloroethane	2.34E-06	1.03E-05	1.03E-05	---
Chloroform	2.15E-06	9.41E-06	9.41E-06	---
Chloromethane	3.90E-06	1.71E-05	1.71E-05	---
Cobalt	3.91E-05	1.71E-04	1.59E-05	---
Dichlorobenzene	8.24E-05	3.61E-04	3.44E-04	---
Ethyl Benzene	1.13E-05	4.95E-05	4.95E-05	---
Formaldehyde	4.18E-03	0.02	0.01	---
Hexachlorobutadiene	2.37E-05	1.04E-04	1.04E-04	---
Hexane	0.08	0.37	0.34	---
Manganese	1.77E-05	7.74E-05	7.21E-05	---
Mercury	1.21E-05	5.29E-05	4.93E-05	---
Methylene Chloride	1.64E-05	8.71E-05	8.71E-05	---
Methyl tert-butyl ether	1.59E-05	6.96E-05	6.96E-05	---
Naphthalene	9.07E-05	1.80E-04	1.80E-04	---
Nickel	9.77E-05	4.28E-04	3.99E-04	---
PAH (not including Naphthalene)	4.73E-05	1.18E-05	1.18E-05	---
POM	4.10E-06	1.80E-05	1.67E-05	---
Propylene	1.51E-03	3.93E-04	3.93E-04	---
Selenium	1.12E-06	4.89E-06	4.55E-06	---
Styrene	3.80E-06	1.71E-05	1.71E-05	---
Tetrachloroethene	3.64E-06	1.60E-05	1.60E-05	---
Toluene	4.60E-04	7.67E-04	7.20E-04	---
Trichloroethene	2.29E-06	1.01E-05	1.01E-05	---
Vinyl Acetate	2.12E-06	1.27E-05	1.27E-05	---
Vinyl Chloride	1.15E-06	5.03E-06	5.03E-06	---
Xylenes	1.85E-03	1.84E-04	1.84E-04	---
Total HAPs	0.10	2.14	0.39	---

Single HAPs	0.08	1.86	0.34
trans-1,2-Dichloroethylene	121.76	533.30	32.6

TDCE Concentrations in Indoor Air (µg/m3)

Water Gremlin 3/6/2020-2/26/2021

Location	Sample Date	SS-26 IA	Location	Sample Date	SS-3 IA	Location	Sample Date	SS-30 IA	Location	Sample Date	SS-35 IA	Location	Sample Date	SS-36 IA	Location	Sample Date	SS-37-2 IA	Location	Sample Date	SS-38 IA
SS-26 IA	3/6/2020	463	SS-3 IA	3/6/2020	6.1	SS-30 IA	3/6/2020	0	SS-35 IA	3/6/2020	41.8	SS-36 IA	3/6/2020	329	SS-37 IA	3/6/2020	589	SS-38 IA	3/6/2020	688
SS-26 IA	3/13/2020	127	SS-3 IA	3/13/2020	18.1	SS-30 IA	3/13/2020	0	SS-35 IA	3/13/2020	45.8	SS-36 IA	3/13/2020	99.3	SS-37 IA	3/13/2020	201	SS-38 IA	3/13/2020	42.4
SS-26 IA	3/20/2020	66.3	SS-3 IA	3/20/2020	7.1	SS-30 IA	4/3/2020	40	SS-35 IA	3/20/2020	99.8	SS-36 IA	3/20/2020	327	SS-37 IA	3/20/2020	74.3	SS-38 IA	3/20/2020	53.7
SS-26 IA	3/27/2020	352	SS-3 IA	3/27/2020	16.6	SS-30 IA	4/10/2020	0	SS-35 IA	3/27/2020	43.2	SS-36 IA	3/27/2020	166	SS-37 IA	3/20/2020	74.4	SS-38 IA	3/27/2020	127
SS-26 IA	4/3/2020	172	SS-3 IA	4/3/2020	76.7	SS-30 IA	4/17/2020	0	SS-35 IA	4/3/2020	122	SS-36 IA	3/27/2020	182	SS-37 IA	3/27/2020	144	SS-38 IA	4/3/2020	622
SS-26 IA	4/10/2020	124	SS-3 IA	4/17/2020	31.7	SS-30 IA	4/24/2020	14	SS-35 IA	4/10/2020	44.1	SS-36 IA	4/3/2020	896	SS-37 IA	4/3/2020	307	SS-38 IA	4/10/2020	247
SS-26 IA	4/17/2020	417	SS-3 IA	4/24/2020	128	SS-30 IA	5/1/2020	97.4	SS-35 IA	4/17/2020	60.9	SS-36 IA	4/10/2020	472	SS-37 IA	4/3/2020	324	SS-38 IA	4/17/2020	1120
SS-26 IA	4/17/2020	536	SS-3 IA	4/24/2020	125	SS-30 IA	5/9/2020	1.3	SS-35 IA	4/24/2020	226	SS-36 IA	4/17/2020	586	SS-37 IA	4/10/2020	120	SS-38 IA	4/24/2020	160
SS-26 IA	4/24/2020	359	SS-3 IA	5/1/2020	61.2	SS-30 IA	5/9/2020	89.7	SS-35 IA	5/1/2020	154	SS-36 IA	4/24/2020	517	SS-37 IA	4/17/2020	260	SS-38 IA	5/1/2020	198
SS-26 IA	5/1/2020	398	SS-3 IA	5/1/2020	86.9	SS-30 IA	5/15/2020	0	SS-35 IA	5/9/2020	29	SS-36 IA	5/1/2020	690	SS-37 IA	4/24/2020	104	SS-38 IA	5/9/2020	184
SS-26 IA	5/9/2020	308	SS-3 IA	5/9/2020	22.3	SS-30 IA	5/22/2020	92.8	SS-35 IA	5/15/2020	20.3	SS-36 IA	5/9/2020	1030	SS-37 IA	5/1/2020	109	SS-38 IA	5/15/2020	363
SS-26 IA	5/15/2020	120	SS-3 IA	5/15/2020	17.5	SS-30 IA	5/29/2020	0	SS-35 IA	12/4/2020	3.5	SS-36 IA	5/15/2020	1030	SS-37 IA	5/9/2020	89.2	SS-38 IA	5/22/2020	439
SS-26 IA	12/4/2020	161	SS-3 IA	5/22/2020	155	SS-30 IA	6/5/2020	5	SS-35 IA	12/11/2020	4.7	SS-36 IA	5/22/2020	1230	SS-37 IA	5/15/2020	128	SS-38 IA	5/29/2020	547
SS-26 IA	12/11/2020	182	SS-3 IA	5/29/2020	88	SS-30 IA	6/12/2020	9.6	SS-35 IA	12/17/2020	57.9	SS-36 IA	5/29/2020	805	SS-37 IA	5/22/2020	162	SS-38 IA	6/5/2020	1050
SS-26 IA	12/17/2020	492	SS-3 IA	6/5/2020	58.9	SS-30 IA	6/19/2020	49.6	SS-35 IA	12/23/2020	231	SS-36 IA	6/5/2020	742	SS-37 IA	5/22/2020	164	SS-38 IA	6/12/2020	1020
SS-26 IA	12/23/2020	213	SS-3 IA	6/12/2020	359	SS-30 IA	6/26/2020	79.6	SS-35 IA	12/31/2020	145	SS-36 IA	6/12/2020	368	SS-37 IA	5/29/2020	143	SS-38 IA	6/19/2020	824
SS-26 IA	12/31/2020	141	SS-3 IA	6/19/2020	82.8	SS-30 IA	7/2/2020	56.9	SS-35 IA	1/7/2021	62.3	SS-36 IA	6/19/2020	1010	SS-37 IA	5/29/2020	267	SS-38 IA	6/26/2020	1670
SS-26 IA	1/7/2021	761	SS-3 IA	6/26/2020	71	SS-30 IA	7/10/2020	0	SS-35 IA	1/15/2021	66	SS-36 IA	6/26/2020	769	SS-37 IA	6/5/2020	126	SS-38 IA	7/2/2020	946
SS-26 IA	1/15/2021	154	SS-3 IA	7/2/2020	92.4	SS-30 IA	7/17/2020	42.3	SS-35 IA	1/22/2021	109	SS-36 IA	7/2/2020	1100	SS-37 IA	6/12/2020	104	SS-38 IA	7/10/2020	1290
SS-26 IA	1/22/2021	316	SS-3 IA	7/10/2020	15.8	SS-30 IA	7/24/2020	72	SS-35 IA	1/29/2021	139	SS-36 IA	7/10/2020	426	SS-37 IA	6/19/2020	168	SS-38 IA	7/17/2020	2290
SS-26 IA	1/29/2021	175	SS-3 IA	7/17/2020	43.8	SS-30 IA	7/31/2020	1.6	SS-35 IA	2/5/2021	74.1	SS-36 IA	7/17/2020	809	SS-37 IA	6/26/2020	232	SS-38 IA	7/24/2020	1670
SS-26 IA	2/5/2021	153	SS-3 IA	7/24/2020	93	SS-30 IA	8/7/2020	199	SS-35 IA	2/12/2021	51.6	SS-36 IA	7/24/2020	580	SS-37 IA	7/2/2020	236	SS-38 IA	7/31/2020	186
SS-26 IA	2/12/2021	264	SS-3 IA	7/31/2020	42.8	SS-30 IA	8/14/2020	107	SS-35 IA	2/19/2021	58.9	SS-36 IA	7/31/2020	1400	SS-37 IA	7/10/2020	145	SS-38 IA	8/7/2020	1340
SS-26 IA	2/19/2021	66.5	SS-3 IA	8/7/2020	190	SS-30 IA	8/21/2020	116	SS-35 IA	2/26/2021	69.2	SS-36 IA	8/7/2020	697	SS-37 IA	7/17/2020	493	SS-38 IA	8/14/2020	622
SS-26 IA	2/26/2021	418	SS-3 IA	8/14/2020	133	SS-30 IA	8/28/2020	9.4				SS-36 IA	8/14/2020	1280	SS-37 IA	7/24/2020	198	SS-38 IA	8/21/2020	1210
			SS-3 IA	8/21/2020	96.9	SS-30 IA	9/4/2020	0				SS-36 IA	8/21/2020	648	SS-37 IA	7/31/2020	376	SS-38 IA	8/28/2020	1070
			SS-3 IA	8/28/2020	14.5	SS-30 IA	9/11/2020	114				SS-36 IA	8/28/2020	611	SS-37 IA	8/7/2020	344	SS-38 IA	9/4/2020	482
			SS-3 IA	9/4/2020	36.7	SS-30 IA	9/18/2020	0				SS-36 IA	9/4/2020	863	SS-37 IA	8/14/2020	395	SS-38 IA	9/11/2020	158
			SS-3 IA	9/11/2020	44.1	SS-30 IA	9/25/2020	13.7				SS-36 IA	9/11/2020	468	SS-37 IA	8/21/2020	391	SS-38 IA	9/18/2020	277
			SS-3 IA	9/18/2020	15.7	SS-30 IA	10/2/2020	0				SS-36 IA	9/18/2020	815	SS-37 IA	8/28/2020	228	SS-38 IA	9/25/2020	914
			SS-3 IA	9/25/2020	37.8	SS-30 IA	10/9/2020	65.5				SS-36 IA	9/25/2020	402	SS-37 IA	9/4/2020	181	SS-38 IA	10/2/2020	283
			SS-3 IA	10/2/2020	47.1	SS-30 IA	10/16/2020	0				SS-36 IA	10/2/2020	779	SS-37 IA	9/11/2020	213	SS-38 IA	10/9/2020	590
			SS-3 IA	10/9/2020	85.5	SS-30 IA	10/23/2020	0				SS-36 IA	10/9/2020	1050	SS-37 IA	9/18/2020	95.7	SS-38 IA	10/16/2020	4160
			SS-3 IA	10/16/2020	7	SS-30 IA	10/30/2020	26				SS-36 IA	10/16/2020	1030	SS-37 IA	9/25/2020	53.2	SS-38 IA	10/23/2020	267
			SS-3 IA	10/23/2020	44.5	SS-30 IA	11/6/2020	25.2				SS-36 IA	10/23/2020	1390	SS-37 IA	10/2/2020	162	SS-38 IA	10/30/2020	906
			SS-3 IA	10/30/2020	21.5	SS-30 IA	11/13/2020	3.6				SS-36 IA	10/30/2020	1350	SS-37 IA	10/9/2020	169	SS-38 IA	11/6/2020	1280
			SS-3 IA	11/6/2020	11.6	SS-30 IA	11/20/2020	1.9				SS-36 IA	11/6/2020	1050	SS-37 IA	10/16/2020	96.4	SS-38 IA	11/13/2020	1340
			SS-3 IA	11/13/2020	7.1	SS-30 IA	11/25/2020	53.9				SS-36 IA	11/13/2020	668	SS-37 IA	10/23/2020	85.8	SS-38 IA	11/20/2020	1290
			SS-3 IA	11/20/2020	8.9	SS-30 IA	12/4/2020	0				SS-36 IA	11/20/2020	538	SS-37 IA	10/30/2020	200	SS-38 IA	11/25/2020	783
			SS-3 IA	11/25/2020	66.3	SS-30 IA	12/11/2020	6.4				SS-36 IA	11/25/2020	823	SS-37 IA	11/6/2020	413	SS-38 IA	12/4/2020	364
			SS-3 IA	12/4/2020	8.9	SS-30 IA	12/17/2020	49.4				SS-36 IA	12/4/2020	3400	SS-37 IA	11/13/2020	76.8	SS-38 IA	12/11/2020	180
			SS-3 IA	12/11/2020	13.7	SS-30 IA	12/23/2020	205				SS-36 IA	12/11/2020	641	SS-37 IA	11/20/2020	85.2	SS-38 IA	12/17/2020	112
			SS-3 IA	12/17/2020	64.4	SS-30 IA	12/31/2020	39.5				SS-36 IA	12/17/2020	400	SS-37 IA	11/25/2020	128	SS-38 IA	12/23/2020	91
			SS-3 IA	12/23/2020	162	SS-30 IA	1/7/2021	5.6				SS-36 IA	12/23/2020	1370	SS-37 IA	12/11/2020	130	SS-38 IA	12/31/2020	395
			SS-3 IA	12/31/2020	52.4	SS-30 IA	1/15/2021	7.6				SS-36 IA	12/31/2020	1470	SS-37 IA	12/17/2020	150	SS-38 IA	1/7/2021	286
			SS-3 IA	1/7/2021	32	SS-30 IA	1/22/2021	0				SS-36 IA	1/7/2021	1210	SS-37 IA	12/23/2020	201	SS-38 IA	1/15/2021	30.1
			SS-3 IA	1/15/2021	21.8	SS-30 IA	1/29/2021	59.3				SS-36 IA	1/15/2021	1340	SS-37 IA	12/31/2020	144	SS-38 IA	1/22/2021	699
			SS-3 IA	1/22/2021	18.2	SS-30 IA	2/5/2021	0				SS-36 IA	1/22/2021	580	SS-37 IA	1/7/2021	200	SS-38 IA	1/29/2021	177
			SS-3 IA	1/29/2021	121	SS-30 IA	2/12/2021	0				SS-36 IA	1/29/2021	1130	SS-37 IA	1/15/2021	72.9	SS-38 IA	2/5/2021	109
			SS-3 IA	2/5/2021	33.1	SS-30 IA	2/19/2021	4.9				SS-36 IA	2/5/2021	1360	SS-37 IA	1/22/2021	178	SS-38 IA	2/12/2021	252
			SS-3 IA	2/12/2021	14.7	SS-30 IA	2/26/2021	85.3				SS-36 IA	2/12/2021	1040	SS-37 IA	1/29/2021	109	SS-38 IA	2/19/2021	233
			SS-3 IA	2/19/2021	24.1							SS-36 IA	2/19/2021	1170	SS-37 IA	2/5/2021	125	SS-38 IA	2/26/2021	928
			SS-3 IA	2/26/2021	91.3							SS-36 IA	2/26/2021	1840	SS-37 IA	2/12/2021	137	SS-38 IA		
															SS-37 IA	2/19/2021	92.1			
															SS-37 IA	2/26/2021	495			
Maximum Detection (µg/m3)		**761**			**359**			**205**			**231**			**3400**			**589**			**4160**
Minimum Detection (µg/m3)		**66.3**			**6.1**			**0**			**3.5**			**99.3**			**53.2**			**30.1**
Average Detection (µg/m3)		**277.6**			**60.9**			**36.3**			**81.6**			**886.3**			**194.3**			**703.2**
95% UCL (µg/m3) including outliers		**343.2**			**73.28**			**66.5**			**113.6**			**1020**			**223.1**			**883.1**

Notes:

1. Parent-duplicate pairs were averaged for the UCL calculation.
2. All data are included in the UCL calculation; however, some data were determined to be outliers at the 5% significance level by ProUCL 5.1's outlier tests.

Chemical Storage Room Sampling Results

Sampling conducted April 8-9, 2021

Sampling analyzed April 12, 2021

Sample	TDCE (ug/m3)
Center 5'	2230
Center 10'	3350
Center 15'	3710
Center 20'	3720
SS-24	1360
SS-25	3110

Vent Flowrates	ACFM	TDCE Conc	TDCE Emission Rate (lb/hr)	TDCE Emission Rate (tpy)	Notes
Vent 1	25,000	3.33	3.114E-04	1.36E-03	Assume Vent 1 comprises 5% of SS-30
Vent 2	25,000	3.33	3.114E-04	1.36E-03	Assume Vent 2 comprises 5% of SS-30
Vent 3	25,000	173	1.624E-02	0.07	Assume Vent 3 concentration comprises 100% of SS-35 and 90% of SS-30
Vent 9	15,000	66.9	3.761E-03	1.65E-02	Assume 30% of SS-37 emisisons are exhausted through Vent 9
Vent 10	15,000	89.2	5.014E-03	2.20E-02	Assume 40% of SS-37 emisisons are exhausted through Vent 10
Vent 12	15,000	4,603	2.587E-01	1.13	Assume room concentration is the maximum of April 2021 stack test results plus 100% of SS-38 emissions are exhausted through Vent 12
Vent 13	15,000	33.5	1.880E-03	8.24E-03	Assume 15% of SS-37 emisisons are exhausted through Vent 13
Vent 14	15,000	33.5	1.880E-03	8.24E-03	Assume 15% of SS-37 emisisons are exhausted through Vent 14
Vent 20	50	1020	1.910E-04	8.37E-04	Assume 100% of SS-36 emissions are exhausted through Vent 20
STRU73			17.35	76	Assumed to become a permit limit
Total			**17.64**	**77.26**	
Notes:					

Sample calculation: 4603.1 µg/m3 * 0.02832 m3/ft3 * 15000 ft3/min*60 min/hr * g/1000000 ug * 1 lb/453.6 g = 0.26 lb/h

Conversions

1 ft3 =	0.02832	m3
1 hr =	60	min
1 g =	1000000	ug
1 lb =	453.6	g
ton/yr =	4.38	lb/hr

Water Gremlin

STRU73

Calculations (Primary Calculation Set)

Assumptions:

Coating Rate Safety Factor 1.25

Potential Emissions Emission Factor Safety Factor 1.25

Coating g/ 5 sec	Coating g/min	Coating lb/hr/Nozzle	Maximum # Nozzles	Coating lb/hr	Potential PM, PM_{10} and $PM_{2.5}$ (lb/hr)	Potential PM, PM_{10} and $PM_{2.5}$ (tpy)	Potential VOCs (lb/hr)	Potential VOCs (tpy)	Control Efficiency	Pot. Controlled PM, PM_{10} and $PM_{2.5}$ (lb/hr)	Potential PM, PM_{10} and $PM_{2.5}$ (tpy)	
	6.2	0.41	108	44.5	0.1336	0.59	0.245	1.073	0.00%	0.13365	0.59	Replacement UV Coaters
	6.2	0.41	2	0.8	0.0025	0.01	0.005	0.020	0.00%	0.00247	0.01	Coater 6

2021 Stack Test Coating Rate **0.66** lb UV coating/hr for 2 nozzle Coater 6 Compliance Test

2021 Stack Test Emission Rate **0.0044** lb VOC/lb coating Coater 6 Compliance Test

0.0024 lb PM10/lb coating Coater 6 Compliance Test

Notes:

It is assumed that PM_{10} and $PM_{2.5}$ equals PM.

No HAPs or Greenhouse Gases will be emitted by Coaters

The average coating rate was used based on tests conducted by Water Gremlin. It is understood the PM emission rate may become an emission limit.

HEPA filter would have control of 99.98%. Control efficiencies are incorporated on the Coating tab at 99.0%.

Coater 6 *Comprehensive Emissions Test Report* , revised August 12, 2021, Pace Analytical.

SDS Version 1.01 **Revised 2020-02-03**

Chemical	CASRN	Maximum Weight%	Minimum Weight %
Isobornyl Acrylate	5888-33-5	69%	40%
4-hydroxybutyl Acrylate	2478-10-6	9%	4%
2-Benzyl-2-dimethylamino-	119313-12-1	5%	1%
Rheological Additive	Proprietary	3%	1%
Visible Photoinitiator	Proprietary	3%	1%
Photoinitiator	Proprietary	1%	1%
Acrylated Resin	Proprietary	1%	1%

Evaluation of Proposed Coater Change

EQUI117/STRU35 South Building R&D Coater Potential Emission Calculations on UV Coating 2/1/2022

Based on Analytical Results from June 2021

Chemical	CASRN	Maximum Weight %	VOC	VOCs (lb/hr)	HAP	HAPs (lb/hr)
Isobornyl Acrylate	5888-33-5	69%	Y	0.01878525	N	0
4-hydroxybutyl Acrylate	2478-10-6	9%	N	0	N	0
2-Benzyl-2-dimethylamino-1-(4-morpholino-phenyl)-1-butanone	119313-12-1	5%	N	0	N	0
				0.01878525		**0**

Assumptions:	
Coating Rate Safety Factor	1.25
Emission Rate Safety Factor	1.25

			Source
2021 Stack Test Coating Rate	**0.66**	lb UV coating/hr for 2 nozzles	Coater 6 Compliance Test
2021 Stack Test VOC Emission Rate	**0.0044**	lb VOC/lb coating	Coater 6 Compliance Test
2021 Stack Test PM10 Emission Rate	**0.0024**	lb PM10/lb coating	Coater 6 Compliance Test

Coating lb/hr/Nozzle	**Maximum # Nozzles**	**Coating lb/hr**	**Potential PM, PM_{10} and $PM_{2.5}$ (lb/hr)**	**Potential PM, PM_{10} and $PM_{2.5}$ (tpy)**	**Potential VOCs (lb/hr)**	**Potential VOCs (tpy)**	**Control Efficiency**	**Pot. Controlled PM, PM_{10} and $PM_{2.5}$ (lb/hr)**	**Potential PM, PM_{10} and $PM_{2.5}$ (tpy)**
0.4125	12	4.950	0.015	0.065	0.027	0.119	0%	0.015	0.065

Notes: Nordson 781S nozzle.
It is assumed that PM_{10} and $PM_{2.5}$ equals PM.
No HAPs or Greenhouse Gases will be emitted by Coaters
The average coating rate was used based on tests conducted by Water Gremlin. It is understood the PM emission rate may become an emission limit.

Commented [A71]: This has been corrected to 1 nozzle on 8/19/2022, to address a modeling comment and correct the associated emission rates. Modeling files are correct; emission calculations were in error.

Evaluation of Proposed Coater Addition

Prototype Coater Potential Emission Calculations on UV Coating

EQUI240, STRU72	Based on Analytical Results from June 2021

Assumptions:	
Coating Rate Safety Factor	2
Emission Rate Safety Factor	2

			Source
2021 Stack Test Coating Rate	**0.66**	lb UV coating/hr for 2 nozzles	Coater 6 Compliance Test
2021 Stack Test VOC Emission Rate	**0.0044**	lb VOC/lb coating	Coater 6 Compliance Test
2021 Stack Test PM10 Emission Rate	**0.0024**	lb PM10/lb coating	Coater 6 Compliance Test

Coating lb/hr/Nozzle	**Maximum # Nozzles**	**Coating lb/hr**	**Potential PM, PM_{10} and $PM_{2.5}$ (lb/hr)**	**Potential PM, PM_{10} and $PM_{2.5}$ (tpy)**	**Potential VOCs (lb/hr)**	**Potential VOCs (tpy)**	**Control Efficiency**	**Pot. Controlled PM, PM_{10} and $PM_{2.5}$ (lb/hr)**	**Potential PM, PM_{10} and $PM_{2.5}$ (tpy)**
0.66	2	1.320	0.006	0.028	0.012	0.051	0%	0.006	0.028

Notes: PVA FCS300 nozzle.
It is assumed that PM_{10} and $PM_{2.5}$ equals PM.
No HAPs or Greenhouse Gases will be emitted by Coater
The average coating rate was used based on tests conducted by Water Gremlin. It is understood the PM emission rate may become an emissio n lim

Water Gremlin Company
Coating Machines: Potential Emission Calculations

Max. Solids Content (VOC Coating):	13%	Max. Solids Content(UV Coating)	100%
Max. Solids Content (Water Based Coating)	21%	UV Coating Spray Gun Transfer Efficiency	95%
LVLP Spray Gun Transfer Efficiency [5]	65%		

Emission Unit ID No.	Emission Unit Description	Coating Machine Number	Application [1]	Manufacturer	Max Solvent Usage (lb/hr) [2]	Maximum Coating Usage (lb/hr)	Potential VOC Emission Rate (lb/hr)	Potential VOC Emission Rate (tpy)	Potential PM, PM10 and PM2.5 Emission Rate (lb/hr) [4]	Potential PM, PM10 and PM2.5 Emissions (tpy	PM Pollution Control Efficiency (%)	Potential VOC Emission Rate (tpy) [3]	Potential PM, PM10 and PM2.5 Emissions (lb/hr)	Potential PM, PM10 and PM2.5 Emissions (tpy)	Notes
EQUI82	Battery Terminal Post Coater	6	UV Coating	In-House	0.82	0.82	4.54E-03	1.99E-02	0.0025	0.0108	0.00%	0.020	0.0025	0.0108	Installed with 2 nozzles
EQUI84	Battery Terminal Post Coater	9	UV Coating	In-House	1.32	1.32E+00	4.54E-03	0.0199	0.0025	0.0108	99.00%	0.020	0.0000	1.08E-04	2 nozzles; Coater modified to UV per 11/16/2021 notification
EQUI85	Battery Terminal Post Coater	10	Drip (WB Only)	In-House	22.06		1.25E-03	0.0055			0.00%	0.01			
EQUI87	Battery Terminal Post Coater	12	Dip	In-House	13.25		11.93	52.23			0.00%	52.23			
EQUI88	Battery Terminal Post Coater	15	Drip/Spray (WB and Solvent)	In-House	4.73	5.44	4.26	18.6554	0.40	1.75	99.00%	18.7	0.0040	0.0175	
EQUI89	Battery Terminal Post Coater	17	Dip (WB Only)	In-House	19.40		1.10E-03	0.0048			0.00%	0.005			
EQUI233	Battery Terminal Post Coater	19	Dip (WB Only)	In-House	1.71	1.71	9.67E-05	0.0004			0.00%	0.000			Dismantled and removed from coating room June 2021. Converted to dip and moved near Coater 30 January 2022. Vents to Vent 8.
EQUI92	Battery Terminal Post Coater	20	Dip (WB Only)	In-House	19.69		1.12E-03	0.0049			0.00%	0.00			
EQUI93	Battery Terminal Post Coater	21	Dip (WB and Solvent)	In-House	66.26		59.64	261.21			0.00%	261.2			
EQUI94	Battery Terminal Post Coater	22	Drip (WB and Solvent)	In-House	15.03		13.53	59.2503			0.00%	59.3			
EQUI95	Battery Terminal Post Coater	23	Spray (WB and Solvent)	In-House	2.36	2.71	2.12	9.28	0.20	0.87	99.00%	9.28	0.0020	0.01	
EQUI97	Battery Terminal Post Coater	25	Dip (WB Only)	In-House	5.25	5.25	2.98E-04	0.0013			0.00%	0.00			
EQUI98	Battery Terminal Post Coater	26	Dip (WB and Solvent)	In-House	2.03		1.83	8.01			0.00%	8.01			Will be brought back to Coating Room 1 per 12/1/2021 notification
EQUI99	Battery Terminal Post Coater	27	Dip (WB and Solvent)	In-House	17.46		15.71	68.82			0.00%	68.82			WB solvent capability added w/ 9/29/21 Notification
EQUI100	Battery Terminal Post Coater	28	Drip (WB and Solvent)	In-House	3.85		3.46	15.16			0.00%	15.16			
EQUI172	Battery Terminal Post Coater	29	Dip (WB Only)	In-House	43.5		2.47E-03	0.0108			0.00%	0.011			Located in hallway, emissions would vent to Vent 11
EQUI116	Battery Terminal Post Coater	30	Dip (WB Only)	In-House	16.3		9.24E-04	0.0040			0.00%	0.004			Moved to North Building per 12/7/2021 notification; emissions vent to Vent 8
EQUI117	South Building R&D Coater	31	UV Coating	In-House	4.95	4.95	2.72E-02	1.19E-01	0.0149	0.0650	0.00%	0.119	0.01485	0.0650	2 nozzles; South Building (not included in sum)
EQUI173	Soaker	N/A		In-House	5.26		4.73	20.73			0.00%	20.73			
EQUI166	Bulk Tank [6]	N/A		In-House	5.06		4.55	19.95			0.00%	19.95			
EQUI219	Battery Terminal Post Coater	33	UV Coating	In-House	7.92	7.92	2.72E-02	0.1192	0.0148	0.0650	99.00%	0.119	0.0001	0.001	12 nozzles
EQUI220	Battery Terminal Post Coater	34	UV Coating	In-House	7.92	7.92	2.72E-02	0.1192	0.0148	0.0650	99.00%	0.119	0.0001	0.001	12 nozzles
EQUI TBD	Replacement UV Coaters - contolled (max. 108 nozzles)	6 plus	Spray	In-House (UV)	44.5	44.5	0.2450	1.0732	0.1336	0.5854	99.00%	1.07	0.0013	0.006	
											Total Potential PM		**0.0101**	**0.044**	

Material	VOC Solvent [8]
Total tons VOCs Per Year	513.54
VOC Solvent Density (lb/gal)	10.89
VOC Content (lb/gal)	9.85
VOC (% by wt)	90%
HAP (% by wt) (Both VOC and Water Based)	0%
VOC (% by wt) - Water Based	0.005%
Hours Uncontrolled	8760
Hours Limited	8760

VOC Content of Water-based Coating Calculated

Tacolyn	0.27	Coating Mix is 27% Tacolyn, Balance is water and Foamex
Tacolyn VOC content	0.0000	by wt of Tacolyn
Foamex 1488	0.006	Coating Mix is 0.6% Foamex
Foamex VOC content	0.00%	by wt of Foamex
VOC content	0.00005	by wt
VOC content	0.005%	% by wt

VOC Emission Factor (UV Coating)
Mass Percentage 0.0000%

Notes:
1. WB - water-based. Those coaters identified by "WB Only" will only use water-based coating. Other Coaters assusme that Water Gremlin can use both WB and VOC Based coating in each coater. Spray coaters include particulate matter calculations based on the estimated solids content of the water-based coaters.
2. Maximum usage rate calculated based on VOC solvent usage data from Water Gremlin. Usage from coaters that were operated less than one hour per day were excluded because how the hour of operations were deemed to be inaccurate.
3. Coating VOC emissions will be limited by the forthcoming air permit and coaters with unlimited potential emissions greater than the limit will not be allowed to operate at their full capacity.
4. Assume that PM = PM10 = PM2.5 emissions.
5. Transfer Efficiency for water based coating based on EPA Automotive Refinishing Isocyanate Profile Chapter 6, May 1997.
6. The Bulk Tank and Soaker dispense solvent for use in the coating room. The Bulk tank and Coater emissions serve all of the coaters, therefore potential emissions are calculated separately based on maximum daily usage divided by 24 hours.
7. Water Gremlin evaluated the HAP and Air toxics contents of Tacolyn. Based on the resulting testing, no HAPs or Air Toxics were detected. Therefore, they are not addressed further.
8. UV coating emissions are based on the Coater 6 performance test from June 2021.
9. Water Gremlin has used FluoSolv WS and NEXT HD Pro as VOC Solvents. The VOC contents of the two solvents are the same. The maximum density of the two solvents (that for NEXT HD Pro) was entered for VOC solvent density. Emissions calculations are not dependent on this density.

Water Gremlin Company
Diesel Generator: Potential Emission Calculations

	EQUI 120	**STRU4**	Manufactured	11/8/2010
Emission Unit Identification Number:	**Emergency Generator Engine**		Installed	May-12
Stack/Vent Designation Number:	**STRU4**		EPA Tier 3 Engine	
Rated Heat Input:	**0.6** MMBtu/hr			
	fuel oil heat capacity (Btu/gal fuel oil) =			137,000 Btu/gal
Rated Mechanical Output:	**80** Hp		@	1,800 RPM
	60 kW			
Fuel Type:	**Diesel**		@ **0.0015** % Sulfur	
Fuel Consumption Rate:	**4.26** gallons/hr			
	2128			

Calculations Summary

Pollutant	Emission Factor	Emission Factor Units	Emission Factor Source	Uncontrolled Emission Rate (lbs/hr)	Uncontrolled Emission Rate (tpy)	Pollution Control Efficiency (%)	Maximum Controlled Emissions (lb/hr)	Controlled Emission Rate (tpy)
PM	2.20E-03	lb/hp-hr	AP-42 Table 3.3-1	0.1760	4.40E-02	0.0%	0.18	4.40E-02
PM_{10}	2.20E-03	lb/hp-hr	AP-42 Table 3.3-1	0.1760	4.40E-02	0.0%	0.18	4.40E-02
$PM_{2.5}$	2.20E-03	lb/hp-hr	AP-42 Table 3.3-1	0.18	4.40E-02	0.0%	0.18	4.40E-02
SO_2	2.05E-03	lb/hp-hr	AP-42 Table 3.3-1	0.16	4.10E-02	0.0%	0.16	4.10E-02
NOx	3.10E-02	lb/hp-hr	AP-42 Table 3.3-1	2.48	0.62	0.0%	2.48	0.62
CO	6.68E-03	lb/hp-hr	AP-42 Table 3.3-1	0.53	0.13	0.0%	0.53	0.13
VOC	2.47E-03	lb/hp-hr	AP-42 Table 3.3-1	0.20	4.94E-02	0.0%	0.20	4.94E-02
Lead	NA	NA	NA	NA	NA	NA	NA	NA
CO_2	163.05	lb/MMBtu	40 CRF 98, Subp. C	9.51E+01	23.76	0.0%	95.06	23.76
CH_4	6.61E-03	lb/MMBtu	40 CRF 98, Subp. C	3.86E-03	9.64E-04	0.0%	0.00	9.64E-04
N_2O	1.32E-03	lb/MMBtu	40 CRF 98, Subp. C	7.71E-04	1.93E-04	0.0%	0.00	1.93E-04
CO_2e	163.61	lb/MMBtu	40 CRF 98, Subp. C	95.38	23.85	0.0%	95.38	23.85
1,3-Butadiene	3.91E-05	lb/MMBtu	AP-42 Table 3.3-2	2.28E-05	5.70E-06	0.0%	0.00	5.70E-06
Acetaldehyde	7.67E-04	lb/MMBtu	AP-42 Table 3.3-2	4.47E-04	1.12E-04	0.0%	0.00	1.12E-04
Acrolein	9.25E-05	lb/MMBtu	AP-42 Table 3.3-2	5.39E-05	1.35E-05	0.0%	0.00	1.35E-05
Benzene	9.33E-04	lb/MMBtu	AP-42 Table 3.3-2	5.44E-04	1.36E-04	0.0%	0.00	1.36E-04
Formaldehyde	1.18E-03	lb/MMBtu	AP-42 Table 3.3-2	6.88E-04	1.72E-04	0.0%	0.00	1.72E-04
Naphthalene	8.68E-05	lb/MMBtu	AP-42 Table 3.3-2	5.06E-05	1.27E-05	0.0%	0.00	1.27E-05
PAH (not including	8.12E-05	lb/MMBtu	AP-42 Table 3.3-2	4.73E-05	1.18E-05	0.0%	0.00	1.18E-05
Propylene	2.58E-03	lb/MMBtu	AP-42 Table 3.3-2	1.50E-03	3.76E-04	0.0%	0.00	3.76E-04
Toluene	4.09E-04	lb/MMBtu	AP-42 Table 3.3-2	2.38E-04	5.96E-05	0.0%	0.00	5.96E-05
Xylenes	2.85E-04	lb/MMBtu	AP-42 Table 3.3-2	1.66E-04	4.15E-05	0.0%	0.00	4.15E-05

Assumed PM=PM10=PM2.5

Water Gremlin Company
Natural Gas External Combustion Units: Potential Emission Calculations

Makeup Air Unit Information

Associated Items:	EQUI106	
	MAU1N	RUPP; R1D.250-G10
Fuel:	Natural Gas	
Total Heat Capacity:	2.50	MMBtu/hr
Heat Value:	1020	MMBtu/MMscf
Operation Limit:	8760	hr/yr

Note: MAU1N vents into the plant. Emissions would exit vents 4-7

Pollutant	Emission Factor (lb/MMscf)	Uncontrolled Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Maximum Controlled Emissions (lb/hr)	Maximum Controlled Emissions (tons/yr)
PM	7.6	0.02	8.16E-02	0.0%	1.9E-02	8.2E-02
PM_{10}	7.6	0.0186	8.16E-02	0.0%	1.9E-02	8.2E-02
$PM_{2.5}$	7.6	0.02	8.16E-02	0.0%	1.9E-02	8.2E-02
SO_2	0.6	0.00	6.44E-03	0.0%	1.5E-03	0.01
NO_x	100	0.25	1.07	0.0%	0.25	1.07
CO	84	0.21	0.90	0.0%	0.21	0.90
VOC	5.5	0.01	5.90E-02	0.0%	1.3E-02	0.06

Hazardous Air Pollutant		Emission Factor (lb/MMscf)	Uncontrolled Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emissions (lb/hr)	Maximum Controlled Emissions (tons/yr)
Arsenic	7440-38-2	2.00E-04	4.9E-07	2.1E-06	0.0%	4.9E-07	2.1E-06
Benzene	71-43-2	2.10E-03	5.1E-06	2.3E-05	0.0%	5.1E-06	2.3E-05
Beryllium	7440-41-7	1.20E-05	2.9E-08	1.3E-07	0.0%	2.9E-08	1.3E-07
Cadmium	7440-43-9	1.10E-03	2.7E-06	1.2E-05	0.0%	2.7E-06	1.2E-05
Chromium	7440-47-3	1.40E-03	3.4E-06	1.5E-05	0.0%	3.4E-06	1.5E-05
Cobalt	7440-48-4	8.40E-05	2.1E-07	9.0E-07	0.0%	2.1E-07	9.0E-07
Dichlorobenzene	25321-22-6	1.20E-03	2.9E-06	1.3E-05	0.0%	2.9E-06	1.3E-05
Formaldehyde	50-00-0	7.50E-02	1.8E-04	8.1E-04	0.0%	1.8E-04	8.1E-04
Hexane	110-54-3	1.80	4.4E-03	1.9E-02	0.0%	4.4E-03	1.9E-02
Lead		5.00E-04	1.2E-06	5.4E-06	0.0%	1.2E-06	5.4E-06
Manganese	7439-96-5	3.80E-04	9.3E-07	4.1E-06	0.0%	9.3E-07	4.1E-06
Mercury	7439-97-6	2.60E-04	6.4E-07	2.8E-06	0.0%	6.4E-07	2.8E-06
Naphthalene	91-20-3	6.10E-04	1.5E-06	6.5E-06	0.0%	1.5E-06	6.5E-06
Nickel	7440-02-0	2.10E-03	5.1E-06	2.3E-05	0.0%	5.1E-06	2.3E-05
POM	00-01-7	8.82E-05	2.2E-07	9.5E-07	0.0%	2.2E-07	9.5E-07
Selenium	7782-49-2	2.40E-05	5.9E-08	2.6E-07	0.0%	5.9E-08	2.6E-07
Toluene	108-88-3	3.40E-03	8.3E-06	3.7E-05	0.0%	8.3E-06	3.7E-05
Total HAPs		---	**4.63E-03**	**2.03E-02**	---	**4.63E-03**	**2.03E-02**

Notes:
Emission factors obtained from AP-42, Chapter 1.4, Tables 1.4-2, 1.4-3, 1.4-4 (07/98)
In this table, POM does not include naphthalene.

Pollutant	GWP	Emission Factor (lbs/MMBtu)	Maximum Uncontrolled Emissions (lb/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Controlled Emission Rate (tons/yr)
CO_2	1	116.98	292	1,281	0.00	292	1,281
CH_4	25	2.20E-03	5.50E-03	2.41E-02	0.00	5.50E-03	2.41E-02
N_2O	298	2.20E-04	5.50E-04	2.41E-03	0.00	5.50E-04	2.41E-03
Total GHG (CO_2e)			292.7	1282.22	0.00	292.7	1,282

Notes:
Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Water Gremlin Company
Natural Gas External Combustion Units: Potential Emission Calculations

Makeup Air Unit Information

Associated Items:	EQUI107	
	MAU2N	CaptiveAire:CAH230
Fuel:	Natural Gas	
Total Heat Capacity:	6.05	MMBtu/hr
Heat Value:	1020	MMBtu/MMscf
Operation Limit:	8760	hr/yr

Note: MAU2N vents into the plant. Emissions would exit vents 1-3

Pollutant	Emission Factor (lb/MMscf)	Uncontrolled Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Maximum Controlled Emissions (lb/hr)	Maximum Controlled Emissions (tons/yr)
PM	7.6	0.05	0.20	0.0%	4.5E-02	0.20
PM_{10}	7.6	0.05	0.20	0.0%	4.5E-02	0.20
$PM_{2.5}$	7.6	0.05	0.20	0.0%	4.5E-02	0.20
SO_2	0.6	0.00	1.6E-02	0.0%	3.6E-03	1.56E-02
NO_x	100	0.59	2.60	0.0%	0.59	2.60
CO	84	0.50	2.18	0.0%	0.50	2.18
VOC	5.5	0.03	0.14	0.0%	3.3E-02	0.14

Hazardous Air Pollutant		Emission Factor (lb/MMscf)	Uncontrolled Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emissions (lb/hr)	Maximum Controlled Emissions (tons/yr)
Arsenic	7440-38-2	2.00E-04	1.2E-06	5.2E-06	0.0%	1.2E-06	5.2E-06
Benzene	71-43-2	2.10E-03	1.2E-05	5.5E-05	0.0%	1.2E-05	5.5E-05
Beryllium	7440-41-7	1.20E-05	7.1E-08	3.1E-07	0.0%	7.1E-08	3.1E-07
Cadmium	7440-43-9	1.10E-03	6.5E-06	2.9E-05	0.0%	6.5E-06	2.9E-05
Chromium	7440-47-3	1.40E-03	8.3E-06	3.6E-05	0.0%	8.3E-06	3.6E-05
Cobalt	7440-48-4	8.40E-05	5.0E-07	2.2E-06	0.0%	5.0E-07	2.2E-06
Dichlorobenzene	25321-22-6	1.20E-03	7.1E-06	3.1E-05	0.0%	7.1E-06	3.1E-05
Formaldehyde	50-00-0	7.50E-02	4.4E-04	1.9E-03	0.0%	4.4E-04	1.9E-03
Hexane	110-54-3	1.80	1.1E-02	4.7E-02	0.0%	1.1E-02	4.7E-02
Lead	7439-92-1	5.00E-04	3.0E-06	1.3E-05	0.0%	3.0E-06	1.3E-05
Manganese	7439-96-5	3.80E-04	2.3E-06	9.9E-06	0.0%	2.3E-06	9.9E-06
Mercury	7439-97-6	2.60E-04	1.5E-06	6.8E-06	0.0%	1.5E-06	6.8E-06
Naphthalene	91-20-3	6.10E-04	3.6E-06	1.6E-05	0.0%	3.6E-06	1.6E-05
Nickel	7440-02-0	2.10E-03	1.2E-05	5.5E-05	0.0%	1.2E-05	5.5E-05
POM	00-01-7	8.82E-05	5.2E-07	2.3E-06	0.0%	5.2E-07	2.3E-06
Selenium	7782-49-2	2.40E-05	1.4E-07	6.2E-07	0.0%	1.4E-07	6.2E-07
Toluene	108-88-3	3.40E-03	2.0E-05	8.8E-05	0.0%	2.0E-05	8.8E-05
Total HAPs		---	**1.12E-02**	**4.91E-02**	---	**1.12E-02**	**4.91E-02**

Notes:
Emission factors obtained from AP-42, Chapter 1.4, Tables 1.4-2, 1.4-3, 1.4-4 (07/98)
In this table, POM does not include naphthalene.

Pollutant	GWP	Emission Factor (lbs/MMBtu)	Maximum Uncontrolled Emissions (lb/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Controlled Emission Rate (tons/yr)
CO_2	1	116.98	708	3,100	0.00	708	3,100
CH_4	25	2.20E-03	1.33E-02	5.83E-02	0.00	1.33E-02	5.83E-02
N_2O	298	2.20E-04	1.33E-03	5.83E-03	0.00	1.33E-03	5.83E-03
Total GHG (CO_2e)			708.4	3,103	0.00	708.4	3,103

Notes:
Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Water Gremlin Company
Natural Gas External Combustion Units: Potential Emission Calculations

Makeup Air Unit Information

Associated Items:	EQUI108	
	MAU3N	CaptiveAire; CAH230
Fuel:	Natural Gas	
Total Heat Capacity:	5.61	MMBtu/hr
Heat Value:	1020	MMBtu/MMscf
Operation Limit:	8760	hr/yr

Note: MAU3N vents into the plant. Emissions would exit vents 1-4

Pollutant	Emission Factor (lb/MMscf)	Uncontrolled Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Maximum Controlled Emissions (lbs/hr)	Maximum Controlled Emissions (tons/yr)
PM	7.6	0.04	0.18	0.0%	4.2E-02	0.18
PM_{10}	7.6	0.04	0.18	0.0%	4.2E-02	0.18
$PM_{2.5}$	7.6	0.04	0.18	0.0%	4.2E-02	0.18
SO_2	0.6	0.00	1.4E-02	0.0%	3.3E-03	0.01
NO_x	100	0.55	2.41	0.0%	0.55	2.41
CO	84	0.46	2.02	0.0%	0.46	2.02
VOC	5.5	0.03	0.13	0.0%	3.0E-02	0.13

Hazardous Air Pollutant		Emission Factor (lb/MMscf)	Uncontrolled Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emissions (lb/hr)	Maximum Controlled Emissions (tons/yr)
Arsenic	7440-38-2	2.00E-04	1.1E-06	4.8E-06	0.0%	1.1E-06	4.8E-06
Benzene	71-43-2	2.10E-03	1.2E-05	5.1E-05	0.0%	1.2E-05	5.1E-05
Beryllium	7440-41-7	1.20E-05	6.6E-08	2.9E-07	0.0%	6.6E-08	2.9E-07
Cadmium	7440-43-9	1.10E-03	6.0E-06	2.6E-05	0.0%	6.0E-06	2.6E-05
Chromium	7440-47-3	1.40E-03	7.7E-06	3.4E-05	0.0%	7.7E-06	3.4E-05
Cobalt	7440-48-4	8.40E-05	4.6E-07	2.0E-06	0.0%	4.6E-07	2.0E-06
Dichlorobenzene	25321-22-6	1.20E-03	6.6E-06	2.9E-05	0.0%	6.6E-06	2.9E-05
Formaldehyde	50-00-0	7.50E-02	4.1E-04	1.8E-03	0.0%	4.1E-04	1.8E-03
Hexane	110-54-3	1.80	9.9E-03	4.3E-02	0.0%	9.9E-03	4.3E-02
Lead	7439-92-1	5.00E-04	2.7E-06	1.2E-05	0.0%	2.7E-06	1.2E-05
Manganese	7439-96-5	3.80E-04	2.1E-06	9.2E-06	0.0%	2.1E-06	9.2E-06
Mercury	7439-97-6	2.60E-04	1.4E-06	6.3E-06	0.0%	1.4E-06	6.3E-06
Naphthalene	91-20-3	6.10E-04	3.4E-06	1.5E-05	0.0%	3.4E-06	1.5E-05
Nickel	7440-02-0	2.10E-03	1.2E-05	5.1E-05	0.0%	1.2E-05	5.1E-05
POM	00-01-7	8.82E-05	4.8E-07	2.1E-06	0.0%	4.8E-07	2.1E-06
Selenium	7782-49-2	2.40E-05	1.3E-07	5.8E-07	0.0%	1.3E-07	5.8E-07
Toluene	108-88-3	3.40E-03	1.9E-05	8.2E-05	0.0%	1.9E-05	8.2E-05
Total HAPs		---	**1.04E-02**	**4.55E-02**	---	**1.04E-02**	**4.55E-02**

Notes:
Emission factors obtained from AP-42, Chapter 1.4, Tables 1.4-2, 1.4-3, 1.4-4 (07/98)
In this table, POM does not include naphthalene.

Pollutant	GWP	Emission Factor (lbs/MMBtu)	Maximum Uncontrolled Emissions (lb/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Controlled Emission Rate (tons/yr)
CO_2	1	116.98	656	2,874	0.00	656	2,874
CH_4	25	2.20E-03	1.23E-02	0	0.00	1.23E-02	5.40E-02
N_2O	298	2.20E-04	1.23E-03	0	0.00	1.23E-03	5.40E-03
Total GHG (CO_2e)			656.8	2,877	0.00	656.8	2,877

Notes:
Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Water Gremlin Company
Natural Gas External Combustion Units: Potential Emission Calculations

Makeup Air Unit Information

Associated Items:	EQUI109
	MAU5N CaptiveAire;CAH36
Fuel:	Natural Gas
Total Heat Capacity:	4.95 MMBtu/hr
Heat Value:	1020 MMBtu/MMscf
Operation Limit:	8760 hr/yr

Note: MAU5N vents into the plant. Emissions would exit vents 5-8

Pollutant	Emission Factor (lb/MMscf)	Uncontrolled Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Maximum Controlled Emissions (lbs/hr)	Maximum Controlled Emissions (tons/yr)
PM	7.6	0.04	0.16	0.0%	3.7E-02	0.16
PM_{10}	7.6	0.04	0.16	0.0%	3.7E-02	0.16
$PM_{2.5}$	7.6	0.04	0.16	0.0%	3.7E-02	0.16
SO_2	0.6	0.00	1.3E-02	0.0%	2.9E-03	0.01
NO_x	100	0.49	2.13	0.0%	0.49	2.13
CO	84	0.41	1.79	0.0%	0.41	1.79
VOC	5.5	0.03	0.12	0.0%	2.7E-02	0.12

Hazardous Air Pollutant		Emission Factor (lb/MMscf)	Uncontrolled Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emissions (lb/hr)	Maximum Controlled Emissions (tons/yr)
Arsenic	7440-38-2	2.00E-04	9.7E-07	4.3E-06	0.0%	9.7E-07	4.3E-06
Benzene	71-43-2	2.10E-03	1.0E-05	4.5E-05	0.0%	1.0E-05	4.5E-05
Beryllium	7440-41-7	1.20E-05	5.8E-08	2.6E-07	0.0%	5.8E-08	2.6E-07
Cadmium	7440-43-9	1.10E-03	5.3E-06	2.3E-05	0.0%	5.3E-06	2.3E-05
Chromium	7440-47-3	1.40E-03	6.8E-06	3.0E-05	0.0%	6.8E-06	3.0E-05
Cobalt	7440-48-4	8.40E-05	4.1E-07	1.8E-06	0.0%	4.1E-07	1.8E-06
Dichlorobenzene	25321-22-6	1.20E-03	5.8E-06	2.6E-05	0.0%	5.8E-06	2.6E-05
Formaldehyde	50-00-0	7.50E-02	3.6E-04	1.6E-03	0.0%	3.6E-04	1.6E-03
Hexane	110-54-3	1.80	8.7E-03	3.8E-02	0.0%	8.7E-03	3.8E-02
Lead	7439-92-1	5.00E-04	2.4E-06	1.1E-05	0.0%	2.4E-06	1.1E-05
Manganese	7439-96-5	3.80E-04	1.8E-06	8.1E-06	0.0%	1.8E-06	8.1E-06
Mercury	7439-97-6	2.60E-04	1.3E-06	5.5E-06	0.0%	1.3E-06	5.5E-06
Naphthalene	91-20-3	6.10E-04	3.0E-06	1.3E-05	0.0%	3.0E-06	1.3E-05
Nickel	7440-02-0	2.10E-03	1.0E-05	4.5E-05	0.0%	1.0E-05	4.5E-05
POM	00-01-7	8.82E-05	4.3E-07	1.9E-06	0.0%	4.3E-07	1.9E-06
Selenium	7782-49-2	2.40E-05	1.2E-07	5.1E-07	0.0%	1.2E-07	5.1E-07
Toluene	108-88-3	3.40E-03	1.7E-05	7.2E-05	0.0%	1.7E-05	7.2E-05
Total HAPs		---	**9.16E-03**	**4.01E-02**	---	**9.16E-03**	**4.01E-02**

Notes:
Emission factors obtained from AP-42, Chapter 1.4, Tables 1.4-2, 1.4-3, 1.4-4 (07/98)
In this table, POM does not include naphthalene.

Pollutant	GWP	Emission Factor (lbs/MMBtu)	Maximum Uncontrolled Emissions (lb/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Controlled Emission Rate (tons/yr)
CO_2	1	116.98	579	2,536	0.00	579	2,536
CH_4	25	2.20E-03	1.09E-02	4.77E-02	0.00	1.09E-02	4.77E-02
N_2O	298	2.20E-04	1.09E-03	4.77E-03	0.00	1.09E-03	4.77E-03
Total GHG (CO_2e)			579.6	2,539	0.00	579.6	2,539

Notes:
Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Water Gremlin Company
Natural Gas External Combustion Units: Potential Emission Calculations

Makeup Air Unit Information

Associated Items:	EQUI110
	MAU6N RUPP; RAM227
Fuel:	Natural Gas
Total Heat Capacity:	5.40 MMBtu/hr
Heat Value:	1020 MMBtu/MMscf
Operation Limit:	8760 hr/yr

Note: MAU6N vents into the plant. Emissions would exit vents 9, 10, 11, and 14

Pollutant	Emission Factor (lb/MMscf)	Uncontrolled Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Maximum Controlled Emissions (lb/hr)	Maximum Controlled Emissions (tons/yr)
PM	7.6	0.04	0.18	0.0%	4.0E-02	0.18
PM_{10}	7.6	0.04	0.18	0.0%	4.0E-02	0.18
$PM_{2.5}$	7.6	0.04	0.18	0.0%	4.0E-02	0.18
SO_2	0.6	0.00	1.4E-02	0.0%	3.2E-03	0.01
NO_x	100	0.53	2.32	0.0%	0.53	2.32
CO	84	0.44	1.95	0.0%	0.44	1.95
VOC	5.5	0.03	0.13	0.0%	2.9E-02	0.13

Hazardous Air Pollutant		Emission Factor (lb/MMscf)	Uncontrolled Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emissions (lb/hr)	Maximum Controlled Emissions (tons/yr)
Arsenic	7440-38-2	2.00E-04	1.1E-06	4.6E-06	0.0%	1.1E-06	4.6E-06
Benzene	71-43-2	2.10E-03	1.1E-05	4.9E-05	0.0%	1.1E-05	4.9E-05
Beryllium	7440-41-7	1.20E-05	6.4E-08	2.8E-07	0.0%	6.4E-08	2.8E-07
Cadmium	7440-43-9	1.10E-03	5.8E-06	2.6E-05	0.0%	5.8E-06	2.6E-05
Chromium	7440-47-3	1.40E-03	7.4E-06	3.2E-05	0.0%	7.4E-06	3.2E-05
Cobalt	7440-48-4	8.40E-05	4.4E-07	1.9E-06	0.0%	4.4E-07	1.9E-06
Dichlorobenzene	25321-22-6	1.20E-03	6.4E-06	2.8E-05	0.0%	6.4E-06	2.8E-05
Formaldehyde	50-00-0	7.50E-02	4.0E-04	1.7E-03	0.0%	4.0E-04	1.7E-03
Hexane	110-54-3	1.80	9.5E-03	4.2E-02	0.0%	9.5E-03	4.2E-02
Lead	7439-92-1	5.00E-04	2.6E-06	1.2E-05	0.0%	2.6E-06	1.2E-05
Manganese	7439-96-5	3.80E-04	2.0E-06	8.8E-06	0.0%	2.0E-06	8.8E-06
Mercury	7439-97-6	2.60E-04	1.4E-06	6.0E-06	0.0%	1.4E-06	6.0E-06
Naphthalene	91-20-3	6.10E-04	3.2E-06	1.4E-05	0.0%	3.2E-06	1.4E-05
Nickel	7440-02-0	2.10E-03	1.1E-05	4.9E-05	0.0%	1.1E-05	4.9E-05
POM	00-01-7	8.82E-05	4.7E-07	2.0E-06	0.0%	4.7E-07	2.0E-06
Selenium	7782-49-2	2.40E-05	1.3E-07	5.6E-07	0.0%	1.3E-07	5.6E-07
Toluene	108-88-3	3.40E-03	1.8E-05	7.9E-05	0.0%	1.8E-05	7.9E-05
Total HAPs		---	**1.00E-02**	**4.38E-02**	---	**1.00E-02**	**4.38E-02**

Notes:
Emission factors obtained from AP-42, Chapter 1.4, Tables 1.4-2, 1.4-3, 1.4-4 (07/98)
In this table, POM does not include naphthalene.

Pollutant	GWP	Emission Factor (lbs/MMBtu)	Maximum Uncontrolled Emissions (lb/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Controlled Emission Rate (tons/yr)
CO_2	1	116.98	632	2,767	0.00	632	2,767
CH_4	25	2.20E-03	1.19E-02	5.20E-02	0.00	1.19E-02	5.20E-02
N_2O	298	2.20E-04	1.19E-03	5.20E-03	0.00	1.19E-03	5.20E-03
Total GHG (CO_2e)			632.3	2,770	0.00	632.3	2,770

Notes:
Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Water Gremlin Company
Natural Gas External Combustion Units: Potential Emission Calculations

Makeup Air Unit Information

Associated Items:	EQUI111
	MAU9N Titan; TA220NGHRH2SPD
Fuel:	Natural Gas
Total Heat Capacity:	2.20 MMBtu/hr
Heat Value:	1020 MMBtu/MMscf
Operation Limit:	8760 hr/yr

Note: MAU9N vents into the plant. Emissions would exit vents 1-3

Pollutant	Emission Factor (lb/MMscf)	Uncontrolled Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Maximum Controlled Emissions (lb/hr)	Maximum Controlled Emissions (tons/yr)
PM	7.6	0.02	7.2E-02	0.0%	1.6E-02	7.17E-02
PM_{10}	7.6	0.02	7.2E-02	0.0%	1.6E-02	7.17E-02
$PM_{2.5}$	7.6	0.02	7.2E-02	0.0%	1.6E-02	7.17E-02
SO_2	0.6	0.00	5.7E-03	0.0%	1.3E-03	5.66E-03
NO_x	100	0.22	0.94	0.0%	0.22	0.943
CO	84	0.18	0.79	0.0%	0.18	0.792
VOC	5.5	0.01	5.2E-02	0.0%	1.2E-02	5.19E-02

Hazardous Air Pollutant		Emission Factor (lb/MMscf)	Uncontrolled Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emissions (lb/hr)	Maximum Controlled Emissions (tons/yr)
Arsenic	7440-38-2	2.00E-04	4.3E-07	1.9E-06	0.0%	4.3E-07	1.9E-06
Benzene	71-43-2	2.10E-03	4.5E-06	2.0E-05	0.0%	4.5E-06	2.0E-05
Beryllium	7440-41-7	1.20E-05	2.6E-08	1.1E-07	0.0%	2.6E-08	1.1E-07
Cadmium	7440-43-9	1.10E-03	2.4E-06	1.0E-05	0.0%	2.4E-06	1.0E-05
Chromium	7440-47-3	1.40E-03	3.0E-06	1.3E-05	0.0%	3.0E-06	1.3E-05
Cobalt	7440-48-4	8.40E-05	1.8E-07	7.9E-07	0.0%	1.8E-07	7.9E-07
Dichlorobenzene	25321-22-6	1.20E-03	2.6E-06	1.1E-05	0.0%	2.6E-06	1.1E-05
Formaldehyde	50-00-0	7.50E-02	1.6E-04	7.1E-04	0.0%	1.6E-04	7.1E-04
Hexane	110-54-3	1.80	3.9E-03	1.7E-02	0.0%	3.9E-03	1.7E-02
Lead	7439-92-1	5.00E-04	1.1E-06	4.7E-06	0.0%	1.1E-06	4.7E-06
Manganese	7439-96-5	3.80E-04	8.2E-07	3.6E-06	0.0%	8.2E-07	3.6E-06
Mercury	7439-97-6	2.60E-04	5.6E-07	2.5E-06	0.0%	5.6E-07	2.5E-06
Naphthalene	91-20-3	6.10E-04	1.3E-06	5.8E-06	0.0%	1.3E-06	5.8E-06
Nickel	7440-02-0	2.10E-03	4.5E-06	2.0E-05	0.0%	4.5E-06	2.0E-05
POM	00-01-7	8.82E-05	1.9E-07	8.3E-07	0.0%	1.9E-07	8.3E-07
Selenium	7782-49-2	2.40E-05	5.2E-08	2.3E-07	0.0%	5.2E-08	2.3E-07
Toluene	108-88-3	3.40E-03	7.3E-06	3.2E-05	0.0%	7.3E-06	3.2E-05
Total HAPs		--	**4.06E-03**	**1.78E-02**	---	**4.06E-03**	**1.78E-02**

Notes:
Emission factors obtained from AP-42, Chapter 1.4, Tables 1.4-2, 1.4-3, 1.4-4 (07/98)
In this table, POM does not include naphthalene.

Pollutant	GWP	Emission Factor (lbs/MMBtu)	Maximum Uncontrolled Emissions (lb/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Controlled Emission Rate (tons/yr)
CO_2	1	116.98	257	1,125	0.00	257	1,125
CH_4	25	2.20E-03	4.83E-03	2.12E-02	0.00	4.83E-03	2.12E-02
N_2O	298	2.20E-04	4.83E-04	2.12E-03	0.00	4.83E-04	2.12E-03
Total GHG (CO_2e)			257.1	1,126	0.00	257.1	1,126

Notes:
Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Water Gremlin Company
Natural Gas External Combustion Units: Potential Emission Calculations

Makeup Air Unit Information

Associated Items:	EQUI112	
	MAU11N	Industrial Air; QD230C
Fuel:	Natural Gas	
Total Heat Capacity:	4.61 MMBtu/hr	
Heat Value:	1020 MMBtu/MMscf	
Operation Limit:	8760 hr/yr	

Note: MAU11N vents into the plant. Emissions would exit vents 9, 10, 11, and 14

Pollutant	Emission Factor (lb/MMscf)	Uncontrolled Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Maximum Controlled Emissions (lb/hr)	Maximum Controlled Emissions (tons/yr)
PM	7.6	0.03	0.15	0.0%	3.4E-02	0.15
PM_{10}	7.6	0.03	0.15	0.0%	3.4E-02	0.15
$PM_{2.5}$	7.6	0.03	0.15	0.0%	3.4E-02	0.15
SO_2	0.6	0.00	1.2E-02	0.0%	2.7E-03	0.01
NO_x	100	0.45	1.98	0.0%	0.45	1.98
CO	84	0.38	1.66	0.0%	0.38	1.66
VOC	5.5	0.02	0.11	0.0%	2.5E-02	0.11

Hazardous Air Pollutant		Emission Factor (lb/MMscf)	Uncontrolled Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emissions (lb/hr)	Maximum Controlled Emissions (tons/yr)
Arsenic	7440-38-2	2.00E-04	9.0E-07	4.0E-06	0.0%	9.0E-07	4.0E-06
Benzene	71-43-2	2.10E-03	9.5E-06	4.2E-05	0.0%	9.5E-06	4.2E-05
Beryllium	7440-41-7	1.20E-05	5.4E-08	2.4E-07	0.0%	5.4E-08	2.4E-07
Cadmium	7440-43-9	1.10E-03	5.0E-06	2.2E-05	0.0%	5.0E-06	2.2E-05
Chromium	7440-47-3	1.40E-03	6.3E-06	2.8E-05	0.0%	6.3E-06	2.8E-05
Cobalt	7440-48-4	8.40E-05	3.8E-07	1.7E-06	0.0%	3.8E-07	1.7E-06
Dichlorobenzene	25321-22-6	1.20E-03	5.4E-06	2.4E-05	0.0%	5.4E-06	2.4E-05
Formaldehyde	50-00-0	7.50E-02	3.4E-04	1.5E-03	0.0%	3.4E-04	1.5E-03
Hexane	110-54-3	1.80	8.1E-03	3.6E-02	0.0%	8.1E-03	3.6E-02
Lead	7439-92-1	5.00E-04	2.3E-06	9.9E-06	0.0%	2.3E-06	9.9E-06
Manganese	7439-96-5	3.80E-04	1.7E-06	7.5E-06	0.0%	1.7E-06	7.5E-06
Mercury	7439-97-6	2.60E-04	1.2E-06	5.1E-06	0.0%	1.2E-06	5.1E-06
Naphthalene	91-20-3	6.10E-04	2.8E-06	1.2E-05	0.0%	2.8E-06	1.2E-05
Nickel	7440-02-0	2.10E-03	9.5E-06	4.2E-05	0.0%	9.5E-06	4.2E-05
POM	00-01-7	8.82E-05	4.0E-07	1.7E-06	0.0%	4.0E-07	1.7E-06
Selenium	7782-49-2	2.40E-05	1.1E-07	4.7E-07	0.0%	1.1E-07	4.7E-07
Toluene	108-88-3	3.40E-03	1.5E-05	6.7E-05	0.0%	1.5E-05	6.7E-05
Total HAPs		---	**8.53E-03**	**3.74E-02**	---	**8.53E-03**	**3.74E-02**

Notes:
Emission factors obtained from AP-42, Chapter 1.4, Tables 1.4-2, 1.4-3, 1.4-4 (07/98)
In this table, POM does not include naphthalene.

Pollutant	GWP	Emission Factor (lbs/MMBtu)	Maximum Uncontrolled Emissions (lb/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Controlled Emission Rate (tons/yr)
CO_2	1	116.98	539	2,361	0.00	539	2,361
CH_4	25	2.20E-03	1.01E-02	0	0.00	1.01E-02	4.44E-02
N_2O	298	2.20E-04	1.01E-03	0	0.00	1.01E-03	4.44E-03
Total GHG (CO_2e)			539.5	2,363	0.00	539.5	2,363

Notes:
Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Water Gremlin Company
Toolroom 1 Abrasive Blasting: Potential Emission Calculations

Blast Unit Information

Associated Items:	**EQUI113** **Vent 20/STRU57**
Blast Media:	Glass Beads
Flow Rate of Gun	314 lb of abrasive/hr
Emission Rate	0.010 lb pollutant/lb of abrasive
Manual Units	1
Manual Gun/Unit	1
Manual Tip Size (1)	0.25 inches
Manual Max Pressure	125 psi
Operation Limit:	8760 hr/yr

Pollutant	Uncontrolled Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emissions (lb/hr)	Maximum Controlled Emissions (tons/yr)
PM	3.14	13.75	99.98%	0.0006	0.0027
PM_{10}	3.14	13.75	99.98%	0.0006	0.0027
$PM_{2.5}$	3.14	13.75	99.98%	0.0006	0.0027
Lead	0.0133	0.0579	99.90%	1.32E-05	5.77E-05

Notes:

Manual blasting unit consists of one gun. Tips for blasting units are not included in the chart of the STAPPA/ALAPCO document. Flow rates, material densities, and emission factors for abrasives taken from STAPPA/ALAPCO Abrasive Blasting guidance (5/91). PM2.5 emission rate conservatively assumed to equal PM10 and PM emissions.

Water Gremlin will add a HEPA Filter to control particulate emissions from this unit

Lead Emission Factor

1.40E-05 kg/kg (lb/lb) of abrasive per hou
AP42 Chapter 13.2.6 Background document test results for Table 4 -5 painted surfaces.

Based on Lead Control for Bridges and Steel Structures paint contained between 30-40% lead. Lead material on the tools at Water Gremlin is close to 100%

4E- E-05 kg/kg (lb/lb) of abrasive per hour. Factor of 3 used to account for difference in lead concentrations. This is conservative as Water Gremlin estimates that only 10% of the surface area of the tool has lea material on it.

Enter the **Internal Nozzle Diameter** 1/4 inches
Enter the **Nozzle Pressure** 125 psig

Determine the flow rate: Using the values above and the chart below, determine the flow rate of abrasive material through the gu

Flow Rate (lb of abrasive/hr) of Abrasive through the nozzle*											
Internal Nozzle Diameter (in)	**Nozzle Pressure (psig)**										
	30	**40**	**50**	**60**	**70**	**80**	**90**	**100**	110	120	125
1/8	28	35	42	49	55	63	70	77	83.82	90.84	94.38
3/16	65	80	94	107	122	135	149	165	178.00	191.96	199.11
1/4	109	138	168	195	221	255	280	309	337.79	366.14	380.30
5/16	205	247	292	354	377	420	462	507	550.64	592.32	611.87
3/8	285	355	417	477	540	600	657	720	783.18	842.52	872.75
7/16	385	472	560	645	755	820	905	940	1057.04	1135.70	1172.70
1/2	503	615	725	835	945	1050	1160	1265	1377.11	1484.80	1538.53
5/8	820	990	1170	1335	1510	1680	1850	2030	2198.64	2370.89	2456.26
3/4	1140	1420	1670	1915	2160	2400	2630	2880	3133.93	3370.71	3490.89
1	2030	2460	2900	3340	3780	4200	4640	5060			
									5503.93	5936.96	6151.46

Flow rate (from the chart above): 380 3/10

Select the type of Abrasive Material Sand

The flow rates in the above chart are for sand. If you are using steel or aluminum oxide as your abrasive blast material, the spreadsheet will automatically convert the flow rate listed in the blue box above to these other abrasive material types.

	Sand (lb of abrasive/hour)	**Glass Beads** (flow rate of sand x (density of Glass Beads/density of sand))*	**Steel** (flow rate of sand x (density of steel/density of sand))*
If needed, correct the flow rate from Sand to Glass Beads or Steel:	380	369	1871

Note: Density of Glass Beads is from an email conversation with Matthew N. Elmer of Pottersbeads on 9/18/201

NOTE: **This unit is a small, bench top unit with a total enclosure. Due to its size, it cannot be operated for a full hour without stopping to refill grit material or open th cabinet to add/remove materials. Due to the batch material of this equipment, 9 minutes per hour are needed to add/remove equ ipment and grit material. Grit flow rate is adjusted to account for this physical limitation.**

Calculate Maximmun Emissions (Potential to Emit)	**Flow Rate of Gun[1]**	**Emission Factor[2]** factor)	**Emission Rate**	**Potential to Emit (PTE) for Gun 1 (in lbs)**		**Potential to Emit (PTE) for Gun 1 (in tons)***
		(lb pollutant/ lb of abrasive)	(flow rate x emission	emission rate x 8,760 hours/year	**Insignificant Activity[3]**	PTE in lbs/2000 lb per ton
Pollutant	(lb abrasive/hr)		(lb pollutant/hour)	(lb pollutant/year)	**(lbs/year)**	(tons pollutant/year)
PM (Particulate Matter)	313.91	0.010	3 11/79	**27498.8**	2,000	**13.7**
PM 10 (PM < 10 microns)	313.91	0.007	2 15/76	**19249.2**	2,000	**9.6**

1 Enter the flow rate of the gun based on the abrasive material use

2 Pick your emission factors from the choices below.

Emission Factors for Abrasives*	PM (lb PM/lb abrasive)	PM10 (lb PM10/lb of Abrasive)**
Sand	0.041	0.029
Grit	0.010	0.007
Steel Shot	0.004	0.0034
Other	0.01	0.01

3 Per MN Rule 7007.1300, Subpart 3.I, individual emission units at a stationary source, each of which have a potential to emit the following pollutants in amounts less then 4000 pounds per year of carbon monoxide and 2000 pounds per year each of SO2, NOx, VOC, PM, and PM10 are considered insignificant activities. These do not need to be counted toward the PTE calculation unless there are other significant sources of emissions at the site.

* Flow rates, material densities, and emission factors for abrasives taken from STAPPA/ALAPCO Abrasive Blasting guidance (5/9
** PM10 emissions derived from STAPPA/ALAPCO PM10 factors which were based on the amount of PM generated:
sand = 0.7 lbs PM10 per lb of PM; grit= 0.7 lb PM10 per lb of PM; Steel shot = 0.86 lb PM10 per lb of PM
For "Other", assume PM10=PM
*** To determine if a permit is needed, add up all potential emissions from the facility. For example, if you are able to operate two blasting guns at the same time, or if you also have a paint spraying booth or other source of emissions at your facility, include these as well. Your total Potential to Em should be below the levels referenced in the*All About Air Permits* website noted above.

Water Gremlin Company
Toolroom 2: Abrasive Blasting: Potential Emission Calculations

Blast Unit Information

Associated Items: **EQUI114**	**Vent 20/STRU57**
Blast Media: Glass Beads	
Flow Rate of Gun	231 lb of abrasive/hr
Emission Rate	0.010 lb pollutant/lb of abrasive
Manual Units	1
Manual Gun/Unit	1
Manual Tip Size (1)	0.25 inches
Manual Max Pressure	90 psi
Operation Limit:	8760 hr/yr

Pollutant	Uncontrolled Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emissions (lb/hr)	Maximum Controlled Emissions (tons/yr)
PM	2.31	10.12	99.98%	0.00046	0.00202
PM_{10}	2.31	10.12	99.98%	0.00046	0.00202
$PM_{2.5}$	2.31	10.12	99.98%	0.00046	0.00202
Lead	0.0097	0.0425	99.90%	9.71E-06	4.25E-05

Notes:

Manual blasting unit consists of one gun. Tips for blasting units are not included in the chart of the STAPPA/ALAPCO document. Flow rates, material densities, and emission factors for abrasives taken from STAPPA/ALAPCO Abrasive Blasting guidance (5/91). PM2.5 emission rate conservatively assumed to equal PM10 and PM emissions.

Water Gremlin will add a HEPA Filter to control particulate emissions from this un

Lead Emission Factor

1.40E-05 kg/kg (lb/lb) of abrasive per hour
AP42 Chapter 13.2.6 Background document test results for Table 4-5 painted surfaces

Based on Lead Control for Bridges and Steel Structures paint contained between 30-40% lead. Lead material on the tools at Water Gremlin is close to 100

40 E-05 kg/kg (lb/lb) of abrasive per hour. Factor of 3 used to account for difference in lead concentrationst.he blue box above to these other abrasive material types.

This is conservative as Water Gremlin estimates that only 10% of the surface area of the tool has lead material on it.

Enter the **Internal Nozzle Diameter** 1/4 inches
Enter the **Nozzle Pressure** 90 psig

Determine the flow rate: Using the values above and the chart below, determine the flow rate of abrasive material through the

Flow Rate (lb of abrasive/hr) of Abrasive through the nozzle*

Internal Nozzle Diameter (in)	Nozzle Pressure (psig) 30	40	50	60	70	80	90	100
1/8	28	35	42	49	55	63	70	77
3/16	65	80	94	107	122	135	149	165
1/4	109	138	168	195	221	255	280	309
5/16	205	247	292	354	377	420	462	507
3/8	285	355	417	477	540	600	657	720
7/16	385	472	560	645	755	820	905	940
1/2	503	615	725	835	945	1050	1160	1265
5/8	820	990	1170	1336	1510	1680	1850	2030
3/4	1140	1420	1670	1915	2160	2400	2630	2880
1	2030	2460	2900	3340	3780	4200	4640	5060

Flow rate (from the chart above): 280

Select the type of Abrasive Material Sand

The flow rates in the above chart are for sand. If you are using steel or aluminum oxide as your abrasive blast material, the spreadsheet will automatically convert the flow rate listed in

	Sand (lb of abrasive/hour)	**Glass Beads** (flow rate of sand x (density of glass beads/density of sand))*	**Steel** (flow rate of sand x (density of steel/density of sand))*
If needed, correct the flow rate from Sand to Aluminum Oxide or Steel:	280	272	1377

Note: Density of Glass Beads is from an email conversation with Matthew N. Elmer of Pottersbeads on 9/18/20

NOTE: This unit is a small, bench top unit with a total enclosure. Due to its size, it cannot be operated for a full hour without stopping to refill grit material or open th cabinet to add/remove materials. Due to the batch material of this equipment, 9 minutes per hour are needed to add/remove equipment and grit material. Grit flow rate is adjusted to account for this physical limitation.

Calculate Maximimun Emission i (Potential to Emit)

Pollutant	Flow Rate of Gun[1] (lb abrasive/hr)	Emission Factor[2] (lb pollutant/ lb of abrasive)	Emission Rate (flow rate x emission factor) (lb pollutant/hour)	Potential to Emit (PTE) for Gun 2 (in lbs) emission rate x 8,760 hours/year (lb pollutant/year)	Insignificant Activity [3] (lbs/year)	Potential to Emit (PTE) for Gun 2 (in tons)*** PTE in lbs/2000 lb per ton (tons pollutant/year)
PM (Particulate Matter)	231.13	0.010	2.14745	**20247.9**	2,000	**10.1**
PM 10 (PM < 10 microns)	231.13	0.007	1.55/89	**14172.9**	2,000	**7.1**

1 Enter the flow rate of the gun based on the abrasive material use
2 Pick your emission factors from the choices below.

Emission Factors for Abrasives*	PM (lb PM/lb abrasive)	PM10 (lb PM10/lb of Abrasive)**
Sand	0.041	0.029
Grit	0.010	0.007
Steel Sho	0.004	0.0034
Other	0.01	0.01

3 Per MN Rule 7007.1300, Subpart 3.1, individual emission units at a stationary source, each of which have a potential to emi the following pollutants in amounts less then 4000 pounds per year of carbon monoxide and 2000 pounds per year each o SO2, NOx, VOC, PM, and PM10 are considered insignificant activities.These do not need to be counted toward the PTE calculation unless there are other significant sources of emissions at the site.

* Flow rates, material densities, and emission factors for abrasives taken from STAPPA/ALAPCO Abrasive Blasting guidance (5/
** PM10 emissions derived from STAPPA/ALAPCO PM10 factors which were based on the amount of PM generate
sand = 0.7 lbs PM10 per lb of PM; grit= 0.7 lb PM10 per lb of PM; Steel shot = 0.86 lb PM10 per lb of P
For "Other", assume PM10=PM
*** To determine if a permit is needed, add up all potential emissions from the facility. For example, if you are able to operate two blasting guns at the same time, or if you also have a paint spraying booth or other source of emissions at your facility, include these as well. Your total Potential to Emit should be below the levels referenced in the *All About Air Permits* website noted above.

Water Gremlin Company
Die Cast Abrasive Blasting: Potential Emission Calculations

Blast Unit Information

Associated Items: **EQUI115** **Vents 7 and 8, STRUs 43 and 50**
Blast Media: Glass Beads
Flow Rate of Gun: 210 lb of abrasive/hr
Emission Rate: 0.010 lb pollutant/lb of abrasive

Manual Units: 1
Manual Gun/Unit: 1
Manual Tip Size (1): 0.25 inches
Manual Max Pressure: 80 psi
Operation Limit: 8760 hr/yr

Enter the **Internal Nozzle Diameter**: 1/4 inches
Enter the **Nozzle Pressure**: 80 psig

Pollutant	Uncontrolled Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emissions (lb/hr)	Maximum Controlled Emissions (tons/yr)
PM	2.10	9.22	99.99%	0.00021	0.0009
PM_{10}	2.10	9.22	99.98%	0.00042	0.0018
$PM_{2.5}$	2.10	9.22	99.98%	0.00042	0.0018
Lead	0.0088	0.0387	99.90%	8.84E-06	3.87E-05

Notes:

Manual blasting unit consists of one gun. Tips for blasting units are not included in the chart of the STAPPA/ALAPCO document. Flow rates, material densities, and emission factors for abrasives taken from STAPPA/ALAPCO Abrasive Blasting guidance (5/91). PM2.5 emission rate conservatively assumed to equal PM10 and PM emissions.

Water Gremlin will add a HEPA Filter to control particulate emissions from this un

Lead Emission Factor

1.40E-05 kg/kg (lb/lb) of abrasive per hour
AP42 Chapter 13.2.6 Background document test results for Table 4-5 painted surfaces

Based on Lead Control for Bridges and Steel Structures paint contained between 30-40% lead. Lead material on the tools at Water Gremlin is close to 100

4.20E-05 kg/kg (lb/lb) of abrasive per hour. Factor of 3 used to account for difference in lead concentrati the blue box above to these other abrasive material types.

This is conservative as Water Gremlin estimates that only 10% of the surface area of the tool has lead material on it.

0.0029
0.0039

CH-04b Total Tpy (EQUI 98 -99)

PM	
PM_{10}	0.0039
$PM_{2.5}$	

255	248	1254

Determine the flow rate: Using the values above and the chart below, determine the flow rate of abrasive material through the

Flow Rate (lb of abrasive/hr) of Abrasive through the nozzle*

Internal Nozzle Diameter (in)	Nozzle Pressure (psig) 30	40	50	60	70	80	90	100
1/8	28	35	42	49	55	63	70	77
3/16	65	80	94	107	122	135	149	165
1/4	109	138	168	195	221	255	280	309
5/16	205	247	292	354	377	420	462	507
3/8	285	355	417	477	540	600	657	720
7/16	385	472	560	645	755	820	905	940
1/2	503	615	725	835	945	1050	1160	1265
5/8	820	990	1170	1336	1510	1680	1850	2030
3/4	1140	1420	1670	1915	2160	2400	2630	2880
1	2030	2460	2900	3340	3780	4200	4640	5060

Flow rate (from the chart above): 255

Select the type of Abrasive Material: Sand

The flow rates in the above chart are for sand. If you are using steel or aluminum oxide as your abrasive blast material, the spreadsheet will automatically convert the flow rate listed in

	Sand (lb of abrasive/hour)	**Glass Beads** (flow rate of sand x (density of glass beads/density of sand))*	**Steel** (flow rate of sand x (density of steel/density of sand))*
If needed, correct the flow rate from Sand to Aluminum Oxide or Steel:			

Note: Density of Glass Beads is from an email conversation with Matthew N. Elmer of Pottersbeads on 9/18/20

NOTE: This unit is a small, bench top unit with a total enclosure. Due to its size, it cannot be operated for a full hour without stopping to refill grit material or open th cabinet to add/remove materials. Due to the batch material of this equipment, 9 minutes per hour are needed to add/remove equipment and grit material. Grit flow rate is adjusted to account for this physical limitation.

Calculate Maximimun Emission [1] (Potential to Emit)

Pollutant	Flow Rate of Gun[1] (lb abrasive/hr)	Emission Factor[2] (lb pollutant/ lb of abrasive)	Emission Rate (flow rate x emission factor) (lb pollutant/hour)	Potential to Emit (PTE) for Gun 3 (in lbs) emission rate x 8,760 hours/year (lb pollutant/year)	Insignificant Activity [3] (lbs/year)	Potential to Emit (PTE) for Gun 3 (in tons)*** PTE in lbs/2000 lb per ton (tons pollutant/year)
PM (Particulate Matter)	210.49	0.010	2 2/19	**18438.6**	2,000	**9.2**
PM 10 (PM < 10 microns)	210.49	0.007	1 9/19	**12907.0**	2,000	**6.5**

1 Enter the flow rate of the gun based on the abrasive material use
2 Pick your emission factors from the choices below.

Emission Factors for Abrasives*	PM (lb PM/lb abrasive)	PM10 (lb PM10/lb of Abrasive)**
Sand	0.041	0.029
Grit	0.010	0.007
Steel Sho	0.004	0.0034
Other	0.01	0.01

3 Per MN Rule 7007.1300, Subpart 3.I, individual emission units at a stationary source, each of which have a potential to emit the following pollutants in amounts less then 4000 pounds per year of carbon monoxide and 2000 pounds per year each of SO2, NOx, VOC, PM, and PM10 are considered insignificant activities.These do not need to be counted toward the PTE calculation unless there are other significant sources of emissions at thesite.

* Flow rates, material densities, and emission factors for abrasives taken from STAPPA/ALAPCO Abrasive Blasting guidance (5/
** PM10 emissions derived from STAPPA/ALAPCO PM10 factors which were based on the amount of PM generate
sand = 0.7 lbs PM10 per lb of PM; grit= 0.7 lb PM10 per lb of PM; Steel shot = 0.86 lb PM10 per lb of P
For "Other", assume PM10=PM
*** To determine if a permit is needed, add up all potential emissions from the facility. For example, if you are able to operate two blasting guns at the same time, or if you also have a paint spraying booth or other source of emissions at your facility, include these as well. Your total Potential to Emit should be below the levels referenced in the *All About Air Permits* website noted above.

Water Gremlin Company
Lead Billet Pots: Potential Emission Calculations
Providing based on MPCA request.

Associated Items:
CE002/TREA1
Smog Hog 15
STRU1

Max. Throughputs

2185	lb/hr throughput short term maximum: 1600 lb/hr for lead meltpot
18,200	lb/day as 365 day rolling avg: 18,200 lb/day for lead meltpot

Emission Unit ID No.	EQUI ID No.	Emission Unit Description	Heating Rate (MMBtu/hr)	Combustion Emissions PM/PM10/PM2.5 Emissions		
				EF (lb/MMBtu)[2]	lb/hr	ton/yr
023	101	CF Scrap Pot (Large Billet Pot) (2)	1.5	7.45E-03	0.011	0.05

			Melt Pot Emissions								
			PM Emissions			PM10/PM2.5 Emissions			Lead Emissions		
EQUI ID No. 101	Melt Pot Thrpt[3] ton/hr	Melt Pot Thrpt[3] ton/yr	EF (lb/ton lead processed)[1]	lb/hr	ton/yr	EF (lb/ton lead processed)[1]	lb/hr	ton/yr	EF (lb/ton lead processed)[1]	lb/hr	ton/yr
Uncontrolled	1.09	3321.50	6.74E-01	7.36E-01	1.12E+00	6.81E-01	7.44E-01	1.13E+00	2.11E-04	2.30E-04	3.49E-04
Controlled	1.09	3321.50	2.77E-02	3.03E-02	4.60E-02	4.56E-02	4.98E-02	7.58E-02	8.93E-05	3.39E-05	1.48E-04

1. Emission factor is obtained from the November 2018 testing. Based on both uncontrolled inlet and controlled outlet emissions.
2. Emission factors obtained from AP-42, Chapter 1.4, Tables 1.4-2, 1.4-3, 1.4-4 (07/98) for Combustion Emissions
3. Throughputs are 15% higher than the average throughput from the 2018 particulate matter stack test
4. Heat Rating is from 1999 Permit Application

			Combustion and Melt Pot Process Particulate Emissions No Longer Combined						
			PM Emissions		PM10/PM2.5 Emissions		Lead Emissions		Quarterly Lead
EQUI ID No. 101	EQUI ID No.	Emission Unit Description	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr
Uncontrolled	101	CF Scrap Pot (Large Billet Pot)	7.36E-01	1.12E+00	7.44E-01	1.13E+00	2.31E-04	3.53E-05	
Smog Hog-Controlled	101	CF Scrap Pot (Large Billet Pot)	3.03E-02	4.60E-02	4.98E-02	7.58E-02	3.46E-05	1.52E-04	3.46E-05
		Assumed total pollution control efficiency	97%		97%		86%		
Natural Gas Combustion Emissions from Lead Melting Pots		Total Controlled Emissions	2.20E-02	3.35E-02	2.23E-02	3.38E-02	3.15E-05	4.82E-05	

	EQUI 101 EU023
Total Heat Capacity (MMBtu/hr):	1.5
Heat Value:	1020

Total of All Melt Pots (lb/hr) w/HEPA Filters	
PM10, PM2.5	Lead
7.57E-02	1.237E-04

Pollutant	Emission Factor (lb/MMscf)[2]	Uncontrolled Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Maximum Controlled Emissions (tons/yr)
SO_2	0.6	8.82E-04	3.9E-03	0.0%	3.86E-03
NO_x	100	1.47E-01	0.64	0.0%	6.44E-01
CO	84	1.24E-01	0.54	0.0%	5.41E-01
VOC	5.5	8.09E-03	3.5E-02	0.0%	3.54E-02

Assumed control efficiency derivation

1	Inlet
0.073	After Nederman (92.7% control) (based on June 2021 stack test)
0.03	After smog hog (59% control)

97.0% Effective control assumed for December 2021 modeling

Hazardous Air Pollutant		Emission Factor (lb/MMscf)	Uncontrolled Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emissions (lb/hr)	Maximum Controlled Emissions (tons/yr)
Arsenic	7440-38-2	2.00E-04	2.94E-07	1.3E-06	0.0%	2.9E-07	1.3E-06
Benzene	71-43-2	2.10E-03	3.1E-06	1.4E-05	0.0%	3.1E-06	1.4E-05
Beryllium	7440-41-7	1.20E-05	1.8E-08	7.7E-08	0.0%	1.8E-08	7.7E-08
Cadmium	7440-43-9	1.10E-03	1.6E-06	7.1E-06	0.0%	1.6E-06	7.1E-06
Chromium	7440-47-3	1.40E-03	2.1E-06	9.0E-06	0.0%	2.1E-06	9.0E-06
Cobalt	7440-48-4	8.40E-05	1.2E-07	5.4E-07	0.0%	1.2E-07	5.4E-07
Dichlorobenzene	25321-22-6	1.20E-03	1.8E-06	7.7E-06	0.0%	1.8E-06	7.7E-06
Formaldehyde	50-00-0	7.50E-02	1.1E-04	4.8E-04	0.0%	1.1E-04	4.8E-04
Hexane	110-54-3	1.80	2.6E-03	1.2E-02	0.0%	2.6E-03	1.2E-02
Lead	7439-92-1	5.00E-04	7.4E-07	3.2E-06	0.0%	7.4E-07	3.2E-06
Manganese	7439-96-5	3.80E-04	5.6E-07	2.4E-06	0.0%	5.6E-07	2.4E-06
Mercury	7439-97-6	2.60E-04	3.8E-07	1.7E-06	0.0%	3.8E-07	1.7E-06
Naphthalene	91-20-3	6.10E-04	9.0E-07	3.9E-06	0.0%	9.0E-07	3.9E-06
Nickel	7440-02-0	2.10E-03	3.1E-06	1.4E-05	0.0%	3.1E-06	1.4E-05
POM	00-01-7	8.82E-05	1.3E-07	5.7E-07	0.0%	1.3E-07	5.7E-07
Selenium	7782-49-2	2.40E-05	3.5E-08	1.5E-07	0.0%	3.5E-08	1.5E-07
Toluene	108-88-3	3.40E-03	5.0E-06	2.2E-05	0.0%	5.0E-06	2.2E-05
Total HAPs		---	**2.78E-03**	**1.22E-02**		---	**2.78E-03**	**1.22E-02**

Notes:
Emission factors obtained from AP-42, Chapter 1.4, Tables 1.4-2, 1.4-3, 1.4-4 (07/98)

Pollutant	GWP	Emission Factor (lbs/MMBtu)	Maximum Uncontrolled Emissions (lb/hr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Controlled Emission Rate (tons/yr)
CO_2	1	116.98	175	0.00	175	769
CH_4	25	2.20E-03	3.30E-03	0.00	3.30E-03	1.45E-02
N_2O	298	2.20E-04	3.30E-04	0.00	3.30E-04	1.45E-03
Total GHG (CO_2e)			175.6		175.6	769

Note:
Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Side Notes:

Stack Test Summary

PM Calculations

Re-Melt Pots Smog Hog 15	Run 1	Run 2	Run 3	Average
Outlet (lb/hr)	0.04	0.014	0.025	**0.026**
Melt Throughput (tons)	1.25	1.15	0.45	**0.95**
Emission Factor (lb/ton)	3.20E-02	1.22E-02	5.56E-02	**2.77E-02**
Emission Factor (lb/lb)	1.60E-05	6.09E-06	2.78E-05	**1.39E-05**
Inlet(lb/hr)	0.88	0.29	0.75	**0.64**
Melt Throughput (tons)	1.25	1.15	0.45	**0.95**
Emission Factor (lb/ton)	7.04E-01	2.52E-01	1.67E+00	**6.74E-01**
Emission Factor (lb/lb)	3.52E-04	1.26E-04	8.33E-04	**3.37E-04**

Throughput - Stack Test November 20, 2018, Page E-3. Based on the amount melted. Does not consider the amount idle, as that should be fairly consistent.
Emissions - Revised Stack Test Results submitted 06/27/2019 Tables 1&2.

PM10 Calculations

Re-Melt Pots Smog Hog 15	Run 1	Run 2	Run 3	Average	
Outlet (lb/hr)	0.044	0.061	0.025	**0.043**	
Melt Throughput (tons)	1.25	1.15	0.45	**0.95**	
Emission Factor (lb/ton)	3.52E-02	5.30E-02	5.56E-02	**4.56E-02**	9.33E-01
Emission Factor (lb/lb)	1.76E-05	2.65E-05	2.78E-05	**2.28E-05**	

Value plus 15% used for EQUI 101 throughput

Inlet(lb/hr)	0.9	0.29	0.75	**0.65**
Melt Throughput (tons)	1.25	1.15	0.45	**0.95**
Emission Factor (lb/ton)	7.20E-01	2.52E-01	1.67E+00	**6.81E-01**
Emission Factor (lb/lb)	3.60E-04	1.26E-04	8.33E-04	**3.40E-04**

Throughput - Stack Test November 20, 2018, Page E-3. Based on the amount melted. Does not consider the amount idle, as that should be fairly consistent.
Emissions - Revised Stack Test Results submitted 06/27/2019 Tables 1&2.

Lead Calculations

Re-Melt Pots Smog Hog 15	Run 1	Run 2	Run 3	Average	
Outlet (lb/hr)		0.00016	0.00018	**0.00017**	
Melt Throughput (tons)		1.634	2.374	**2.004**	
Melt Throughput (tons) - Lead		1.552	2.255	**1.904**	Assume 95% Lead
Emission Factor (lb/ton)		1.03E-04	7.98E-05	**8.93E-05**	
Emission Factor (lb/lb)		5.15E-08	3.99E-08	**4.46E-08**	
Note on this unit only two valid runs were completed.)					
Inlet(lb/hr)		0.00031	0.00039	**0.00035**	
Melt Throughput (tons)		0.68	1.63	2.37	**2**
Melt Throughput (tons) - Lead		0.65	1.55	2.25	**1.90** Assume 95% Lead
Emission Factor (lb/ton)		4.80E-04	2.52E-04	1.69E-04	**0.00021**
Emission Factor (lb/lb)		2.40E-07	1.26E-07	8.44E-08	**1.05E-07**

Value used for EQUI 104 throughput. Did not add 15% safety factor since low-throughput run not included in average.
Throughput - Stack Test November 21, 2018, Page E-5. Based on the amount melted. Does not consider the amount idle, as that should be fairly consistent.
Emissions - Revised Stack Test Results submitted 06/27/2019 Tables 7&8.

Inlet - Table 1 **Outlet**

lb/hr	Run 1	Run 2	Run 3	Run 1	Run 2	Run 3
Filterable	0.33	0.14	0.34	0.02	0.007	0.016
Filterable + Org Cond	0.88	0.29	0.75	0.04	0.014	0.025
Total PM10	0.9	0.29	0.75	0.044	0.061	0.025
Inorg Cond	0.02	0	0	0.004	0.047	0
(Page E-3 Total cond	0.57	0.15	0.41	0.024	0.054	0.009
Cond %	63%	52%	55%	55%	89%	36%

Smog-Hog-only Control - Average
91.3%
Smog-Hog-only Control - Runs 1 and 3
95.8%

[redacted]

Mailbag Pots for the project:
Large #2 This is the dedicated runout pot for the CF operation. The CF scrap is melted and pumped over to the big pot #1. We should call it the CF scrap pot.
Small #3 This is our 8,000 LB pot which we use to runoff plant scrap. About 6,000 LBS/Day. We usually refer to it as the scrap pot
Die Run #4 This is a dedicated 1,800 LB pot for dead soft lead for Sweeys. We run about 14,000 LBS/Month
Collins #5 This is the 40,000 LB CF pot. We run about 20,000 LBS/Day. Collins is a poor description so let's call it the CF Pot.

Lead Control from September 2021 Die Cast 52 Test

	Inlet	Outlet
Filterable lead collected (mg)		1.9440
Filterable lead mass rate (lb/hr)		5.36E-07
Lead control efficiency		**86%**

	Inlet	Outlet
		0.266
		7.33E-08
		86%

Water Gremlin Company
Lead Billet Pots: Potential Emission Calculations
Providing based on MPCA request.

Associated Items:
CE002/TREA1
Smog Hog 15
STRU1

Note: EQUI 102 and 103 cannot operate at the same time.

Max. Throughput
1000 lb/hr throughput short term maximum
6,000 lb/day as 365 day rolling avg

Emission Unit ID No.	EQUI ID No.	Emission Unit Description	Heating Rate (MMBtu/hr)	Combustion Emissions PM/PM10/PM2.5 Emissions EF (lb/MMBtu) [1]	lb/hr	ton/yr
024	102	Scrap Pot (Small Billet Pot) (3)	0.5	7.45E-03	0.004	0.02

EQUI ID No. 102	Melt Pot Thrpt [3] ton/hr	Melt Pot Thrpt [3] ton/yr	Melt Pot Emissions PM Emissions EF (lb/ton lead processed) [1]	PM Emissions lb/hr	PM Emissions ton/yr	PM10/PM2.5 Emissions EF (lb/ton lead processed) [1]	PM10/PM2.5 Emissions lb/hr	PM10/PM2.5 Emissions ton/yr	Lead Emissions EF (lb/ton lead processed) [1]	Lead Emissions lb/hr	Lead Emissions ton/yr
Uncontrolled	0.50	1095.00	6.74E-01	3.37E-01	3.69E-01	6.81E-01	3.40E-01	3.73E-01	2.56E-04	1.28E-04	1.40E-04
Controlled	0.50	1095.00	2.77E-02	1.39E-02	1.52E-02	4.56E-02	2.28E-02	2.50E-02	8.93E-05	4.46E-05	4.89E-05

1. Emission factor is obtained from the November 2018 testing. Based on both uncontrolled inlet and controlled outlet emissions.
2. Emission factors obtained from AP-42, Chapter 1.4, Tables 1.4-2, 1.4-3, 1.4-4 (07/98) for Combustion Emissions

3. Throughputs are from Source Listing spreadsheet dated 06/21/2019
4. Heat Rating is from 1999 Permit Application

EQUI ID No. 102	EQUI ID No.	Emission Unit Description	Combustion and Melt Pot Process Particulate Emissions No Longer Combined PM Emissions lb/hr	PM Emissions ton/yr	PM10/PM2.5 Emissions lb/hr	PM10/PM2.5 Emissions ton/yr	Lead Emissions lb/hr	Lead Emissions ton/yr	Quarterly Lead lb/hr
Uncontrolled	102	Scrap Pot (Small Billet Pot)	3.37E-01	3.69E-01	3.40E-01	3.73E-01	1.28E-04	1.41E-04	
Controlled	102	Scrap Pot (Small Billet Pot)	1.39E-02	1.52E-02	2.28E-02	2.50E-02	4.46E-05	5.08E-05	4.49E-05
		HEPA Filter Control	97%		97%		86%	86%	
	Nederman + Smog Hog	Controlled Emissions	1.01E-02	1.10E-02	1.65E-02	1.12E-02	1.76E-05	1.94E-05	

Natural Gas Combustion Emissions from Lead Melting Pots

	EQUI 102 EU024
Total Heat Capacity (MMBtu/hr)	0.5
Heat Value:	1020

Pollutant	Emission Factor (lb/MMscf) [2]	Uncontrolled Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Maximum Controlled Emissions (tons/yr)
SO_2	0.6	2.94E-04	1.3E-03	0.0%	1.29E-03
NO_x	100	4.90E-02	0.21	0.0%	2.15E-01
CO	84	4.12E-02	0.18	0.0%	1.80E-01
VOC	5.5	2.70E-03	1.2E-02	0.0%	1.18E-02

Hazardous Air Pollutant		Emission Factor (lb/MMscf)	Uncontrolled Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emissions (lb/hr)	Maximum Controlled Emissions (tons/yr)
Arsenic	7440-38-2	2.00E-04	9.8E-08	4.3E-07	0.0%	9.8E-08	4.3E-07
Benzene	71-43-2	2.10E-03	1.0E-06	4.5E-06	0.0%	1.0E-06	4.5E-06
Beryllium	7440-41-7	1.20E-05	5.9E-09	2.6E-08	0.0%	5.9E-09	2.6E-08
Cadmium	7440-43-9	1.10E-03	5.4E-07	2.4E-06	0.0%	5.4E-07	2.4E-06
Chromium	7440-47-3	1.40E-03	6.9E-07	3.0E-06	0.0%	6.9E-07	3.0E-06
Cobalt	7440-48-4	8.40E-05	4.1E-08	1.8E-07	0.0%	4.1E-08	1.8E-07
Dichorobenzene	25321-22-6	1.20E-03	5.9E-07	2.6E-06	0.0%	5.9E-07	2.6E-06
Formaldehyde	50-00-0	7.50E-02	3.7E-05	1.6E-04	0.0%	3.7E-05	1.6E-04
Hexane	110-54-3	1.80	8.8E-04	3.9E-03	0.0%	8.8E-04	3.9E-03
Lead	7439-92-1	5.00E-04	2.5E-07	1.1E-06	0.0%	2.5E-07	1.1E-06
Manganese	7439-96-5	3.80E-04	1.9E-07	8.2E-07	0.0%	1.9E-07	8.2E-07
Mercury	7439-97-6	2.60E-04	1.3E-07	5.6E-07	0.0%	1.3E-07	5.6E-07
Naphthalene	91-20-3	6.10E-04	3.0E-07	1.3E-06	0.0%	3.0E-07	1.3E-06
Nickel	7440-02-0	2.10E-03	1.0E-06	4.5E-06	0.0%	1.0E-06	4.5E-06
POM	00-16-7	8.82E-05	4.3E-08	1.9E-07	0.0%	4.3E-08	1.9E-07
Selenium	7782-49-2	2.40E-05	1.2E-08	5.2E-08	0.0%	1.2E-08	5.2E-08
Toluene	108-88-3	3.40E-03	1.7E-06	7.3E-06	0.0%	1.7E-06	7.3E-06
Total HAP's		--	**9.26E-05**	**4.05E-03**	--	**9.26E-05**	**4.05E-03**

Notes:
Emission factors obtained from AP-42, Chapter 1.4, Tables 1.4-2, 1.4-3, 1.4-4 (07/98)

Pollutant	GWP	Emission Factor (lbs/MMBtu)	Maximum Uncontrolled Emissions (lb/hr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Controlled Emission Rate (tons/yr)
CO_2	1	116.98	58.49	0.00	58	256
CH_4	25	2.20E-03	1.10E-03	0.00	1.10E-03	4.82E-03
N_2O	298	2.20E-04	1.10E-04	0.00	1.10E-04	4.82E-04
Total GHG (CO_2e)			58.55		58.5	256

Note:
Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Side notes:

Stack Test Summary

PM Calculations

Re-Melt Pots Smog Hog 15	Run 1	Run 2	Run 3	Average
Outlet (lb/hr)	0.04	0.014	0.025	**0.026**
Melt Throughput (tons)	1.25	1.15	0.45	**0.95**
Emission Factor (lb/ton)	3.20E-02	1.22E-02	5.56E-02	**2.77E-02**
Emission Factor (lb/lb)	1.60E-05	6.09E-06	2.78E-05	**1.39E-05**

Inlet(lb/hr)	0.88	0.29	0.75	**0.64**
Melt Throughput (tons)	1.25	1.15	0.45	**0.95**
Emission Factor (lb/ton)	7.04E-01	2.52E-01	########	**6.74E-01**
Emission Factor (lb/lb)	3.52E-04	1.26E-04	8.33E-04	**3.47E-04**

Throughput - Stack Test November 20, 2018, Page E-3. Based on the amount melted. Does not consider the amount idle, as that should be fairly consistent.
Emissions - Revised Stack Test Results submitted 06/27/2019 Tables 1&2.

PM10 Calculations

Re-Melt Pots Smog Hog 15	Run 1	Run 2	Run 3	Average
Outlet (lb/hr)	0.044	0.061	0.025	**0.043**
Melt Throughput (tons)	1.25	1.15	0.45	**0.95**
Emission Factor (lb/ton)	3.52E-02	5.30E-02	5.56E-02	**4.56E-02**
Emission Factor (lb/lb)	1.76E-05	2.65E-05	2.78E-05	**2.28E-05**

Inlet(lb/hr)	0.9	0.29	0.75	**0.65**
Melt Throughput (tons)	1.25	1.15	0.45	**0.95**
Emission Factor (lb/ton)	7.20E-01	2.52E-01	########	**6.81E-01**
Emission Factor (lb/lb)	3.60E-04	1.26E-04	8.33E-04	**3.40E-04**

Throughput - Stack Test November 20, 2018, Page E-3. Based on the amount melted. Does not consider the amount idle, as that should be fairly consistent.

Emissions - Revised Stack Test Results submitted 06/27/2019 Tables 1&2.

Lead Calculations

Re-Melt Pots Smog Hog 15	Run 1	Run 2	Run 3	Average
Outlet (lb/hr)		0.00016	0.00018	**0.00017**
Melt Throughput (tons)		1.634	2.374	**2.004**
Melt Throughput (tons) - Lead		1.552	2.255	**1.904** Assume 95% Lead
Emission Factor (lb/ton)		1.03E-04	7.98E-05	**8.93E-05**
Emission Factor (lb/lb)		5.15E-08	3.99E-08	**4.46E-08**
(Note on this unit only two valid runs were completed.)				

Inlet(lb/hr)	0.00031	0.00039	0.00038	**0.00038**
Melt Throughput (tons)	0.68	1.63	2.37	**1.56**
Melt Throughput (tons) - Lead	0.65	1.55	2.25	**1.48** Assume 95% Lead
Emission Factor (lb/ton)	4.80E-04	2.52E-04	1.69E-04	**2.56E-04**
Emission Factor (lb/lb)	2.40E-07	1.26E-07	8.44E-08	**1.28E-07**

Throughput - Stack Test November 21, 2018, Page E-5. Based on the amount melted. Does not consider the amount idle, as that should be fairly consistent.
Emissions - Revised Stack Test Results submitted 06/27/2019 Tables 7&8.

Water Gremlin Company
Lead Billet Pots: Potential Emission Calculations
Providing based on MPCA request.

Associated Items:
CE002/TREA1
Smog Hog 15
STRU1

Note: EQUI 102 and 103 cannot operate at the same time.

Max. Throughput	
240	lb/hr throughput short term maximum
7,000	lb/day as 365 day rolling avg

				Combustion Emissions		
				PM/PM10/PM2.5 Emissions		
Emission Unit ID No.	EQUI ID No.	Emission Unit Description	Heating Rate (MMBtu/hr)	EF (lb/MMBtu) [1]	lb/hr	ton/yr
025	103	Doe Run Melt Pot (4)	0.5	7.45E-03	0.004	0.02

			Melt Pot Emissions								
			PM Emissions			PM10/PM2.5 Emissions			Lead Emissions		
EQUI ID No. 103	Melt Pot Thrpt [3]	Melt Pot Thrpt [4]	EF (lb/ton metal processed) [1]	lb/hr	ton/yr	EF (lb/ton metal processed) [1]	lb/hr	ton/yr	EF (lb/ton lead processed) [1]	lb/hr	ton/yr
	ton/hr	ton/yr									
Uncontrolled	0.12	1277.5	6.74E-01	8.08E-02	4.30E-01	8.61E-01	8.17E-02	4.35E-01	2.56E-04	3.08E-05	1.64E-04
Controlled	0.12	1277.5	2.77E-02	3.33E-03	1.77E-02	4.56E-02	5.47E-03	2.91E-02	8.93E-05	1.07E-05	5.70E-05

1. Emission factor is obtained from the November 2018 testing. Based on both uncontrolled inlet and controlled outlet emissions.
2. Emission factors obtained from AP-42, Chapter 1.4, Tables 1.4-2, 1.4-3, 1.4-4 (07/98) for Combustion Emissions

3. Throughputs are from Source Listing spreadsheet dated 06/21/2019
4. Heat Rating is from 1999 Permit Application

			Combustion and Melt Pot Process Particulate Emissions No Longer Combined						
			PM Emissions		PM10/PM2.5 Emissions		Lead Emissions		Quarterly Lead
EQUI ID No. 103	EQUI ID No.	Emission Unit Description	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr
Uncontrolled	103	Doe Run Melt Pot	8.08E-02	4.30E-01	8.17E-02	4.35E-01	3.10E-05	1.65E-04	
Controlled	103	Doe Run Melt Pot	3.73E-03	1.93E-02	3.73E-03	1.93E-02	1.10E-05	5.91E-05	1.10E-05
		HEPA Filter Control	97%	97%	97%	97%	86%	86%	
	Nederman + Smog Hog Controlled Emissions		2.42E-03	1.29E-02	2.44E-03	1.30E-02	4.24E-06	2.28E-05	

Natural Gas Combustion Emissions from Lead Melting Pots

	EQUI 103 EU02S
Total Heat Capacity (MMBtu/hr)	0.5
Heat Value:	1020

Pollutant	Emission Factor (lb/MMscf) [2]	Uncontrolled Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Maximum Controlled Emissions (tons/yr)
SO_2	0.6	2.94E-04	1.3E-03	0.0%	1.29E-03
NO_x	100	4.90E-02	0.21	0.0%	2.15E-01
CO	84	4.12E-02	0.18	0.0%	1.80E-01
VOC	5.5	2.70E-03	1.2E-02	0.0%	1.18E-02

Hazardous Air Pollutant		Emission Factor (lb/MMscf)	Uncontrolled Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emissions (lb/hr)	Maximum Controlled Emissions (tons/yr)
Arsenic	7440-38-2	2.00E-04	9.8E-08	4.3E-07	0.0%	9.8E-08	4.3E-07
Benzene	71-43-2	2.10E-03	1.0E-06	4.5E-06	0.0%	1.0E-06	4.5E-06
Beryllium	7440-41-7	1.20E-05	5.9E-09	2.6E-08	0.0%	5.9E-09	2.6E-08
Cadmium	7440-43-9	1.10E-03	5.4E-07	2.4E-06	0.0%	5.4E-07	2.4E-06
Chromium	7440-47-3	1.40E-03	6.9E-07	3.0E-06	0.0%	6.9E-07	3.0E-06
Cobalt	7440-48-4	8.40E-05	4.1E-08	1.8E-07	0.0%	4.1E-08	1.8E-07
Dichlorobenzene	25321-22-6	1.20E-03	5.9E-07	2.6E-06	0.0%	5.9E-07	2.6E-06
Formaldehyde	50-00-0	7.50E-02	3.7E-05	1.6E-04	0.0%	3.7E-05	1.6E-04
Hexane	110-54-3	1.80	8.8E-04	3.9E-03	0.0%	8.8E-04	3.9E-03
Lead	7439-92-1	5.00E-04	2.5E-07	1.1E-06	0.0%	2.5E-07	1.1E-06
Manganese	7439-96-5	3.80E-04	1.9E-07	8.2E-07	0.0%	1.9E-07	8.2E-07
Mercury	7439-97-6	2.60E-04	1.3E-07	5.6E-07	0.0%	1.3E-07	5.6E-07
Naphthalene	91-20-3	6.10E-04	3.0E-07	1.3E-06	0.0%	3.0E-07	1.3E-06
Nickel	7440-02-0	2.10E-03	1.0E-06	4.5E-06	0.0%	1.0E-06	4.5E-06
PUM	99+01-7	8.91E-05	4.3E-08	1.9E-07	0.0%	4.3E-08	1.9E-07
Selenium	7782-49-2	2.40E-05	1.2E-08	5.2E-08	0.0%	1.2E-08	5.2E-08
Toluene	108-88-3	3.40E-03	1.7E-06	7.3E-06	0.0%	1.7E-06	7.3E-06
Total HAPs		---	**9.26E-04**	**4.05E-03**	---	**9.26E-04**	**4.05E-03**

Notes:
Emission factors obtained from AP-42, Chapter 1.4, Tables 1.4-2, 1.4-3, 1.4-4 (07/98)

Pollutant	GWP	Emission Factor (lbs/MMBtu)	Maximum Uncontrolled Emissions (lb/hr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Controlled Emission Rate (tons/yr)
CO_2	1	116.98	58.49	0.00	58	256
CH_4	25	2.20E-03	1.10E-03	0.00	1.10E-03	4.82E-03
N_2O	298	2.20E-04	1.10E-04	0.00	1.10E-04	4.82E-04
Total GHG (CO_2e)			58.55		58.5	256

Notes:
Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Side notes:
Stack Test Summary
PM Calculations

Re-Melt Pots Smog Hog	Run 1	Run 2	Run 3	Average
Outlet (lb/hr)	0.04	0.014	0.025	**0.026**
Melt Throughput (tons)	1.25	1.15	0.45	**0.95**
Emission Factor (lb/ton)	3.20E-02	1.22E-02	5.58E-02	**2.77E-02**
Emission Factor (lb/lb)	1.60E-05	6.09E-06	2.78E-05	**1.39E-05**

Inlet(lb/hr)	0.88	0.29	0.75	**0.64**
Melt Throughput (tons)	1.25	1.15	0.45	**0.95**
Emission Factor (lb/ton)	7.04E-01	2.52E-01	########	**6.74E-01**
Emission Factor (lb/lb)	3.52E-04	1.26E-04	8.33E-04	**3.37E-04**

Throughput - Stack Test November 20, 2018, Page E-3. Based on the amount melted. Does not consider the amount idle, as that should be fairly consistent.
Emissions - Revised Stack Test Results submitted 06/27/2019 Tables 1&2.

PM10 Calculations

Re-Melt Pots Smog Hog	Run 1	Run 2	Run 3	Average
Outlet (lb/hr)	0.044	0.061	0.025	**0.043**
Melt Throughput (tons)	1.25	1.15	0.45	**0.95**
Emission Factor (lb/ton)	3.52E-02	5.30E-02	5.56E-02	**4.56E-02**
Emission Factor (lb/lb)	1.76E-05	2.65E-05	2.78E-05	**2.28E-05**

Inlet(lb/hr)	0.9	0.29	0.75	**0.65**
Melt Throughput (tons)	1.25	1.15	0.45	**0.95**
Emission Factor (lb/ton)	7.20E-01	2.52E-01	########	**6.81E-01**
Emission Factor (lb/lb)	3.60E-04	1.26E-04	8.33E-04	**3.40E-04**

Throughput - Stack Test November 20, 2018, Page E-3. Based on the amount melted. Does not consider the amount idle, as that should be fairly consistent.
Emissions - Revised Stack Test Results submitted 06/27/2019 Tables 1&2.

Lead Calculations

Re-Melt Pots Smog Hog	Run 1	Run 2	Run 3	Average	
Outlet (lb/hr)		0.00016	0.00018	**0.00017**	
Melt Throughput (tons)		1.634	2.374	**2.004**	
Melt Throughput (tons) - Lead		1.552	2.255	**1.904**	Assume 95% Lead
Emission Factor (lb/ton)		1.03E-04	7.98E-05	**9.93E-05**	
Emission Factor (lb/lb)		5.15E-08	3.99E-08	**4.96E-08**	
(Note on this unit only two valid runs were completed.)					

Inlet(lb/hr)	0.00031	0.00039	0.00038	**0.00038**	
Melt Throughput (tons)	0.68	1.63	2.37	**1.56**	
Melt Throughput (tons) -	0.65	1.55	2.25	**1.48**	Assume 95% Lead
Emission Factor (lb/ton)	4.80E-04	2.52E-04	1.69E-04	**2.58E-04**	
Emission Factor (lb/lb)	2.40E-07	1.26E-07	8.44E-08	**1.29E-07**	

Throughput - Stack Test November 21, 2018, Page E-5. Based on the amount melted. Does not consider the amount idle, as that should be fairly consistent.
Emissions - Revised Stack Test Results submitted 06/27/2019 Tables 7&8.

Water Gremlin Company
Lead Billet Pots: Potential Emission Calculations
Providing based on MPCA request.

Associated Items:
CE002/TREA1
Smog Hog 1S
STRU1

Max. Throughput

4000	lb/hr throughput short term maximum
40,000	lb/day as 365 day avg

				Combustion Emissions		
				PM/PM10/PM2.5 Emissions		
Emission Unit ID No.	**EQUI No.**	**Emission Unit Description**	**Heating Rate (MMBtu/hr)**	**EF (lb/MMBtu)** [1]	**lb/hr**	**ton/yr**
026	104	CF Pot (Collins Re-melt Pot)	0.34	7.45E-03	0.003	0.01

			Melt Pot Emissions								
				PM Emissions			PM10/PM2.5 Emissions			Lead Emissions	
EQUI ID No. 104	**Melt Pot Thrpt** [3]	**Melt Pot Thrpt** [3]	**EF (lb/ton metal processed)** [1]	**lb/hr**	**ton/yr**	**EF (lb/ton metal processed)** [1]	**lb/hr**	**ton/yr**	**EF (lb/ton lead processed)** [1]	**lb/hr**	**ton/yr**
	ton/hr	**ton/yr**									
Uncontrolled	2.00	7,800.00	6.74E-01	1.35E+00	2.46E+00	5.91E-01	1.30E+00	2.46E+00	2.59E-04	5.14E-04	9.38E-04
Smog Hog Controlled	2.00	7,800.00	2.77E-02	5.55E-02	1.01E-01	4.56E-02	9.14E-02	1.66E-01	9.93E-05	1.79E-04	3.26E-04

1. Emission factor is obtained from the November 2018 testing. Based on both uncontrolled inlet and controlled outlet emissions.
2. Emission factors obtained from AP-42, Chapter 1.4, Tables 1.4-2, 1.4-3, 1.4-4 (07/98) for Combustion Emissions

3. Throughputs are the average throughputs from the 2018 lead stack test
4. Heat Rating is from 1999 Permit Application

			Combustion and Melt Pot Process Particulate Emissions No Longer Combined						
			PM Emissions		**PM10/PM2.5 Emissions**		**Lead Emissions**		**Quarterly Lead**
EQUI ID No. 104	**EQUI ID No.**	**Emission Unit Description**	**lb/hr**	**ton/yr**	**lb/hr**	**ton/yr**	**lb/hr**	**ton/yr**	**lb/hr**
Uncontrolled	104	CF Pot (Collins Re-melt Pot)	1.35E+00	2.46E+00	1.30E+00	2.46E+00	5.14E-04	9.37E-04	
Smog Hog Controlled	104	CF Pot (Collins Re-melt Pot)	5.55E-02	1.01E-01	9.14E-02	1.66E-01	1.79E-04	3.27E-04	1.79E-04
		REFA Filter Control	97%		97%		86%		
		Nederman + Smog Hog Controlled Emissions	4.04E-02	7.36E-02	4.08E-02	7.44E-02	7.00E-05	1.28E-04	

Natural Gas Combustion Emissions from Lead Melting Pots

	EQUI 104
	EU026
Total Heat Capacity (MMBtu/hr)	0.34
Heat Value:	1020

Pollutant	**Emission Factor (lb/MMscf)** [2]	**Uncontrolled Emission Rate (lbs/hr)**	**Maximum Uncontrolled Emissions (tons/yr)**	**Pollution Control Efficiency (%)**	**Maximum Controlled Emissions (tons/yr)**
SO_2	0.6	2.00E-04	8.8E-04	0.0%	8.76E-04
NO_x	100	3.33E-02	0.15	0.0%	1.46E-01
CO	84	2.80E-02	0.12	0.0%	1.23E-01
VOC	5.5	1.83E-03	8.0E-03	0.0%	8.03E-03

Hazardous Air Pollutant		**Emission Factor (lb/MMscf)**	**Uncontrolled Emission Rate (lbs/hr)**	**Maximum Uncontrolled Emissions (tons/yr)**	**Pollution Control Efficiency (%)**	**Controlled Emissions (lb/hr)**	**Maximum Controlled Emissions (tons/yr)**
Arsenic	7440-38-2	2.00E-04	6.7E-08	2.9E-07	0.0%	6.7E-08	2.9E-07
Benzene	71-43-2	2.10E-03	7.0E-07	3.1E-06	0.0%	7.0E-07	3.1E-06
Beryllium	7440-41-7	1.20E-05	4.0E-09	1.8E-08	0.0%	4.0E-09	1.8E-08
Cadmium	7440-43-9	1.10E-03	3.7E-07	1.6E-06	0.0%	3.7E-07	1.6E-06
Chromium	7440-47-3	1.40E-03	4.7E-07	2.0E-06	0.0%	4.7E-07	2.1E-06
Cobalt	7440-48-4	8.40E-05	2.8E-08	1.2E-07	0.0%	2.8E-08	1.2E-07
Dichlorobenzene	25321-22-6	1.21E-03	4.0E-07	1.8E-06	0.0%	4.0E-07	1.8E-06
Formaldehyde	50-00-0	7.50E-02	2.5E-05	1.1E-04	0.0%	2.5E-05	1.1E-04
Hexane	110-54-3	1.80	6.0E-04	2.6E-03	0.0%	6.0E-04	2.6E-03
Lead	7439-92-1	5.00E-04	1.7E-07	7.3E-07	0.0%	1.7E-07	7.3E-07
Manganese	7439-96-5	3.80E-04	1.3E-07	5.5E-07	0.0%	1.3E-07	5.5E-07
Mercury	7439-97-6	2.60E-04	8.7E-08	3.8E-07	0.0%	8.7E-08	3.8E-07
Naphthalene	91-20-3	6.10E-04	2.0E-07	8.9E-07	0.0%	2.0E-07	8.9E-07
Nickel	7440-02-0	2.10E-03	7.0E-07	3.1E-06	0.0%	7.0E-07	3.1E-06
PDM	00-01-7	8.82E-05	2.9E-08	1.3E-07	0.0%	2.9E-08	1.3E-07
Selenium	7782-49-2	2.40E-05	8.0E-09	3.5E-08	0.0%	8.0E-09	3.5E-08
Toluene	108-88-3	3.40E-03	1.1E-06	5.0E-06	0.0%	1.1E-06	5.0E-06
Total HAPs		---	**6.29E-04**	**2.76E-03**	---	**6.29E-04**	**2.76E-03**

Note:
Emission factors obtained from AP-42, Chapter 1.4, Tables 1.4-2, 1.4-3, 1.4-4 (07/98)

Pollutant	**GWP**	**Emission Factor (lbs/MMBtu)**	**Maximum Uncontrolled Emissions (lb/hr)**	**Pollution Control Efficiency (%)**	**Controlled Emission Rate (lbs/hr)**	**Controlled Emission Rate (tons/yr)**
CO_2	1	116.98	39.77	0.00	40	174
CH_4	25	2.20E-03	7.48E-04	0.00	7.48E-04	3.28E-03
N_2O	298	2.20E-04	7.48E-05	0.00	7.48E-05	3.28E-04
Total GHG (CO_2e)			39.81		39.8	174

Note:
Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Side notes:

Stack Test Summary

PM Calculations

Re-Melt Pots Smog Hog 1S	Run 1	Run 2	Run 3	Average
Outlet (lb/hr)	0.04	0.014	0.025	**0.026**
Melt Throughput (tons)	1.25	1.15	0.45	**0.95**
Emission Factor (lb/ton)	3.20E-02	1.22E-02	5.56E-02	**2.77E-02**
Emission Factor (lb/lb)	1.60E-05	6.09E-06	2.78E-05	**1.39E-05**
Inlet(lb/hr)	0.88	0.29	0.75	**0.64**
Melt Throughput (tons)	1.25	1.15	0.45	**0.95**
Emission Factor (lb/ton)	7.04E-01	2.52E-01	##########	**1.47E-01**
Emission Factor (lb/lb)	3.52E-04	1.26E-04	8.33E-04	**3.37E-04**

Throughput - Stack Test November 20, 2018, Page E-3. Based on the amount melted. Does not consider the amount idle, as that should be fairly consistent.
Emissions - Revised Stack Test Results submitted 06/27/2019 Tables 1&2.

PM10 Calculations

Re-Melt Pots Smog Hog 1S	Run 1	Run 2	Run 3	Average
Outlet (lb/hr)	0.044	0.061	0.025	**0.043**
Melt Throughput (tons)	1.25	1.15	0.45	**0.95**
Emission Factor (lb/ton)	3.52E-02	5.30E-02	5.56E-02	**4.56E-02**
Emission Factor (lb/lb)	1.76E-05	2.65E-05	2.78E-05	**2.28E-05**
Inlet(lb/hr)	0.9	0.29	0.75	**0.65**
Melt Throughput (tons)	1.25	1.15	0.45	**0.95**
Emission Factor (lb/ton)	7.20E-01	2.52E-01	##########	**6.81E-01**
Emission Factor (lb/lb)	3.60E-04	1.26E-04	8.33E-04	**3.40E-04**

Throughput - Stack Test November 20, 2018, Page E-3. Based on the amount melted. Does not consider the amount idle, as that should be fairly consistent.
Emissions - Revised Stack Test Results submitted 06/27/2019 Tables 1&2.

Lead Calculations

Re-Melt Pots Smog Hog 1S	Run 1	Run 2	Run 3	Average
Outlet (lb/hr)		0.00016	0.00018	**0.00017**
Melt Throughput (tons)		1.634	2.374	**2.004**
Melt Throughput (tons) - Lead		1.552	2.255	**1.904** Assume 95% Lead
Emission Factor (lb/ton)		1.03E-04	7.98E-05	**9.03E-05**
Emission Factor (lb/lb)		5.15E-08	3.99E-08	**4.49E-08**

(Note on this unit only two valid runs were completed.)

Inlet(lb/hr)	0.00031	0.00039	0.00038	**0.00038**
Melt Throughput (tons)	0.68	1.63	2.37	**1.56**
Melt Throughput (tons) - Lead	0.65	1.55	2.25	**1.48** Assume 95% Lead
Emission Factor (lb/ton)	4.80E-04	2.52E-04	1.78E-04	**2.58E-04**
Emission Factor (lb/lb)	2.40E-07	1.26E-07	8.44E-08	**1.29E-07**

Throughput - Stack Test November 21, 2018, Page E-5. Based on the amount melted. Does not consider the amount idle, as that should be fairly consistent.
Emissions - Revised Stack Test Results submitted 06/27/2019 Tables 7&8.

Water Gremlin Company
Tin Melt Pot: Potential Emission Calculations
Providing based on MPCA request.

Associated Items:
EQUI 221 STRU1

Max. Throughputs

2500	lb/hr throughput short term maximum: 2500 lb/hr for tin meltpo
137	lb/day as 365 day rolling avg: 50,000 lb/year for tin meltpo

			Melt Pot Emissions					
			PM Emissions			PM10/PM2.5 Emissions		
EQUI ID No. 173	Melt Pot Thrpt[2] ton/hr	Melt Pot Thrpt[2] ton/yr	EF (lb/ton tin processed)[1]	lb/hr	ton/yr	EF (lb/ton tin processed)[1]	lb/hr	ton/yr
Uncontrolled	1.25	25.00	6.74E+01	8.42E-01	8.42E-03	6.81E+01	8.51E-01	8.51E-03
Smog Hog-Controlled	1.25	25.00	2.77E+02	3.46E-02	3.46E-04	4.56E+02	5.70E+02	5.70E-04
			Assumed total pollution control efficiency	97%	97%		97%	97%
			Total Controlled Emissions	2.50E+00	2.50E-02		2.55E-02	2.55E-04

1. Tin pot particulate emission factor is obtained from the November 2018 lead melt pot testing based on uncontrolled inlet result

2. Throughputs are from tin pot information received 8/6/2021

Side Notes:
Stack Test Summary
PM Calculations

Outlet (lb/hr)	0.04	0.014	0.025	**0.026**
Melt Throughput (tons)	1.25	1.15	0.45	**0.95**
Emission Factor (lb/ton)	2.98E-02	1.22E-02	5.56E-02	**2.77E-02**
Emission Factor (lb/lb)	1.49E-05	6.09E-06	2.78E-05	**1.39E-05**
Inlet(lb/hr)	0.88	0.29	0.75	**0.64**
Melt Throughput (tons)	1.25	1.15	0.45	**0.95**
Emission Factor (lb/ton)	7.04E-01	2.52E-01	1.67E+00	**6.74E-01**
Emission Factor (lb/lb)	3.52E-04	1.26E-04	8.33E-04	**2.71E-04**

Throughput - Stack Test November 20, 2018, Page E-3. Based on the amount melted. Does not consider the amount idle, as that should be fairly consistent.
Emissions - Revised Stack Test Results submitted 06/27/2019 Tables 1&2.

PM10 Calculations

Re-Melt Pots Smog Hog 15	Run 1	Run 2	Run 3	Average
Outlet (lb/hr)	0.044	0.061	0.025	**0.043**
Melt Throughput (tons)	1.25	1.15	0.45	**0.95**
Emission Factor (lb/ton)	3.54E-02	5.30E-02	5.56E-02	**4.56E-02**
Emission Factor (lb/lb)	1.76E-05	2.65E-05	2.78E-05	**2.28E-05**
Inlet(lb/hr)	0.9	0.29	0.75	**0.65**
Melt Throughput (tons)	1.25	1.15	0.45	**0.95**
Emission Factor (lb/ton)	7.20E-01	2.52E-01	1.67E+00	**6.81E-01**
Emission Factor (lb/lb)	3.60E-04	1.26E-04	8.33E-04	**2.55E-04**

Throughput - Stack Test November 20, 2018, Page E-3. Based on the amount melted. Does not consider the amount idle, as that should be fairly consistent.
Emissions - Revised Stack Test Results submitted 06/27/2019 Tables 1&2.

Water Gremlin Company
Bake Oven: Potential Emission Calculations
EQUI 222
STRU 70

Fuel:	Natural Gas	
Total Heat Capacity:	0.30	MMBtu/hr
Heat Value:	1020	MMBtu/MMscf
Operation Limit:	8760	hr/yr

Pollutant	Emission Factor (lb/MMscf)	Uncontrolled Emission Rate (lb/hr)	Maximum Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Maximum Controlled Emissions (lb/hr)
PM	7.6	0.00224	9.8E-03	0.0%	0.002
PM_{10}	7.6	0.002235	9.8E-03	0.0%	0.0022
$PM_{2.5}$	7.6	0.002235	9.8E-03	0.0%	0.0022
SO_2	0.6	0.00	7.7E-04	0.0%	0.000
NO_x	100	0.03	0.13	0.0%	0.029
CO	84	0.02	0.11	0.0%	0.025
VOC	5.5	0.00	7.1E-03	0.0%	0.002
Lead	0.0005	1.471E-07	6.441E-07		1.47E-07

Hazardous Air Pollutant		Emission Factor (lb/MMscf)	Uncontrolled Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)
Arsenic	7440-38-2	2.00E-04	5.9E-08	2.6E-07	0.0%
Benzene	71-43-2	2.10E-03	6.2E-07	2.7E-06	0.0%
Beryllium	7440-41-7	1.20E-05	3.5E-09	1.5E-08	0.0%
Cadmium	7440-43-9	1.10E-03	3.2E-07	1.4E-06	0.0%
Chromium	7440-47-3	1.40E-03	4.1E-07	1.8E-06	0.0%
Cobalt	7440-48-4	8.40E-05	2.5E-08	1.1E-07	0.0%
Dichlorobenzene	25321-22-6	1.20E-03	3.5E-07	1.5E-06	0.0%
Formaldehyde	50-00-0	7.50E-02	2.2E-05	9.7E-05	0.0%
Hexane	110-54-3	1.80	5.3E-04	2.3E-03	0.0%
Lead	7439-92-1	5.00E-04	1.5E-07	6.4E-07	0.0%
Manganese	7439-96-5	3.80E-04	1.1E-07	4.9E-07	0.0%
Mercury	7439-97-6	2.60E-04	7.6E-08	3.3E-07	0.0%
Naphthalene	91-20-3	6.10E-04	1.8E-07	7.9E-07	0.0%
Nickel	7440-02-0	2.10E-03	6.2E-07	2.7E-06	0.0%
POM	00-01-7	8.82E-05	2.6E-08	1.1E-07	0.0%
Selenium	7782-49-2	2.40E-05	7.1E-09	3.1E-08	0.0%
Toluene	108-88-3	3.40E-03	1.0E-06	4.4E-06	0.0%
Total HAPs		**---**	**5.55E-04**	**2.43E-03**	**---**

Notes:
Emission factors obtained from AP-42, Chapter 1.4, Tables 1.4-2, 1.4-3, 1.4-4 (07/98)

Pollutant	GWP	Emission Factor (lbs/MMBtu)	Maximum Uncontrolled Emissions (lb/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)
CO_2	1	116.98	35	154	0.00
CH_4	25	2.20E-03	0.0007	0.0029	0.00
N_2O	298	2.20E-04	0.00007	0.00029	0.00
Total GHG (CO_2e)			35.1	154	0.00

Notes:

Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Maximum Controlled Emissions (tpy)
9.8E-03
9.8E-03
9.8E-03
0.00
0.13
0.11
0.01
6.44E-07

Controlled Emissions (lb/hr)	Maximum Controlled Emissions (tons/yr)
5.9E-08	2.6E-07
6.2E-07	2.7E-06
3.5E-09	1.5E-08
3.2E-07	1.4E-06
4.1E-07	1.8E-06
2.5E-08	1.1E-07
3.5E-07	1.5E-06
2.2E-05	9.7E-05
5.3E-04	2.3E-03
1.5E-07	6.4E-07
1.1E-07	4.9E-07
7.6E-08	3.3E-07
1.8E-07	7.9E-07
6.2E-07	2.7E-06
2.6E-08	1.1E-07
7.1E-09	3.1E-08
1.0E-06	4.4E-06
5.55E-04	**2.43E-03**

Controlled Emission Rate (lbs/hr)	Controlled Emission Rate (tons/yr)
35	154
6.60E-04	2.89E-03
6.60E-05	2.89E-04
35.1	154

Water Gremlin - Mitigation System Potential Emission Calculations

Based on Preliminary Results - EQUI 167

STRU 41

Uncontrolled	**378.63**	**VOCs**
	0.4	mg/cubic meter
	6.24E-08	conversion mg/cubic meter to lb/cubic foot
	695	cfm Final System Exhaust - 600 cfm for SSDS and 330 cfm for SVE system.
	60	min/hr
	9.85E-04	lb/hr
Uncontrolled Emissions	0.0043	tpy
Controlled Emissions	**378.63**	**VOCs**
	0.379	mg/cubic meter
	6.24E-08	conversion mg/cubic meter to lb/cubic foot
	695	cfm
	60	min/hr
	9.85E-04	lb/hr
	0.00432	tpy

Water Gremlin Company
Sub-slab Mitigation System

Mitigation System Information

Associated Items:	EQUI167	STRU41	
Stack diameter	8 inches		0.2032 meters
Exit velocity	695 scfm		

Compound/Parameter	CAS No.	Carbon effluent	Carbonin-between	SSDS influent	SVE influent	Influent			Effluent			
						Value to Use	Emissions	Emissions	Value to Use	Emissions	Emissions	
		01/28/2022	01/28/2022	01/28/2022	01/28/2022							
		Result	**Result**	**Result**	**Result**	ug/m3	lb/hr	(tpy)	ug/m3	lb/hr	(tpy)	HAP?
Volatile Organic Compounds (ug/m3)												
1,1,1-Trichloroethane	71-55-6	<1.9	<2.0	<2.0	47.3	47.3	1.23E-04	5.39E-04	1.9	4.95E-06	2.17E-05	Yes
1,1,2,2-Tetrachloroethane	79-34-5	<2.4	<2.5	<2.5	<2.6	2.6	6.77E-06	2.96E-05	2.4	6.25E-06	2.74E-05	Yes
1,1,2-Trichloroethane	79-00-5	<0.93	<1.0	<1.0	<1.0	1	2.60E-06	1.14E-05	0.93	2.42E-06	1.06E-05	Yes
1,1-Dichloroethane	75-34-3	<1.4	1.6	<1.5	9.5	9.5	2.47E-05	1.08E-04	1.4	3.64E-06	1.60E-05	Yes
1,1-Dichloroethene	75-35-4	<1.4	<1.5	<1.5	<1.5	1.5	3.90E-06	1.71E-05	1.4	3.64E-06	1.60E-05	Yes
1,2,4-Trichlorobenzene	120-82-1	<12.7	<13.6	<13.6	<13.8	13.8	3.59E-05	1.57E-04	12.7	3.31E-05	1.45E-04	Yes
1,2,4-Trimethylbenzene	95-63-6	<1.7	<1.8	<1.8	<1.8	1.8	4.69E-06	2.05E-05	1.7	4.43E-06	1.94E-05	No
1,2-Dibromoethane	106-93-4	<1.3	<1.4	<1.4	<1.4	1.4	3.64E-06	1.60E-05	1.3	3.38E-06	1.48E-05	Yes
1,2-Dichlorobenzene	95-50-1	<5.1	<5.5	<5.5	<5.6	5.6	1.46E-05	6.39E-05	5.1	1.33E-05	5.82E-05	No
1,2-Dichloroethane	107-06-2	<1.4	<1.5	<1.5	<1.5	1.5	3.90E-06	1.71E-05	1.4	3.64E-06	1.60E-05	Yes
1,2-Dichloropropane	78-87-5	<1.6	<1.7	<1.7	<1.7	1.7	4.43E-06	1.94E-05	1.6	4.17E-06	1.82E-05	Yes
1,2-Dichlorotetrafluoromethane	76-14-2	<2.4	<2.6	<2.6	<2.6	2.6	6.77E-06	2.96E-05	2.4	6.25E-06	2.74E-05	No
1,3,5-Trimethylbenzene	108-67-8	<1.7	<1.8	<1.8	<1.8	1.8	4.69E-06	2.05E-05	1.7	4.43E-06	1.94E-05	No
1,3-Butadiene	106-99-0	<0.76	<0.81	<0.81	<0.82	0.82	2.13E-06	9.35E-06	0.76	1.98E-06	8.67E-06	Yes
1,3-Dichlorobenzene	541-73-1	<5.1	<5.5	<5.5	<5.6	5.6	1.46E-05	6.39E-05	5.1	1.33E-05	5.82E-05	No
1,4-Dichlorobenzene	106-46-7	<5.1	<5.5	<5.5	<5.6	5.6	1.46E-05	6.39E-05	5.1	1.33E-05	5.82E-05	Yes
2-Butanone (MEK)	78-93-3	<5.0	<5.4	<5.4	<5.5	5.5	1.43E-05	6.27E-05	5	1.30E-05	5.70E-05	No
2-Hexanone (methyl butyl ketone)	591-78-6	<7.0	<7.5	<7.5	<7.6	7.6	1.98E-05	8.67E-05	7	1.82E-05	7.98E-05	No
4-Ethyltoluene	622-96-8	<4.2	<4.5	<4.5	<4.6	4.6	1.20E-05	5.25E-05	4.2	1.09E-05	4.79E-05	No
4-Methyl-2-pentanone (MIBK)	108-10-1	<7.0	<7.5	<7.5	<7.6	7.6	1.98E-05	8.67E-05	7	1.82E-05	7.98E-05	Yes
Acetone	67-64-1	<10.1	<10.9	12.4	12.4	12.4	3.23E-05	1.41E-04	10.1	2.63E-05	1.15E-04	No
Benzene	71-43-2	<0.55	<0.58	0.76	<0.59	0.76	1.98E-06	8.67E-06	0.55	1.43E-06	6.27E-06	Yes
Benzyl chloride	100-44-7	<4.4	<4.7	<4.7	<4.8	4.8	1.25E-05	5.47E-05	4.4	1.15E-05	5.02E-05	Yes
Bromodichloromethane	75-27-4	<2.3	<2.4	<2.4	<2.5	2.5	6.51E-06	2.85E-05	2.3	5.99E-06	2.62E-05	No
Bromoform	75-25-2	<8.8	<9.4	<9.4	<9.6	9.6	2.50E-05	1.09E-04	8.8	2.29E-05	1.00E-04	Yes
Bromomethane	74-83-9	<1.3	<1.4	<1.4	<1.4	1.4	3.64E-06	1.60E-05	1.3	3.38E-06	1.48E-05	Yes
Carbon disulfide	75-15-0	<1.1	<1.1	<1.1	<1.2	1.2	3.12E-06	1.37E-05	1.1	2.86E-06	1.25E-05	Yes
Carbon tetrachloride	56-23-5	<2.2	<2.3	<2.3	<2.3	2.3	5.99E-06	2.62E-05	2.2	5.73E-06	2.51E-05	Yes
Chlorobenzene	108-90-7	<1.6	<1.7	<1.7	<1.7	1.7	4.43E-06	1.94E-05	1.6	4.17E-06	1.82E-05	Yes
Chloroethane	75-00-3	<0.90	<0.96	<0.96	<0.98	0.98	2.55E-06	1.12E-05	0.9	2.34E-06	1.03E-05	Yes
Chloroform	67-66-3	<0.83	<0.89	<0.89	<0.91	0.91	2.37E-06	1.04E-05	0.83	2.16E-06	9.46E-06	Yes
Chloromethane	74-87-3	1.5	1	1.3	1.1	1.3	3.38E-06	1.48E-05	1.5	3.90E-06	1.71E-05	Yes
cis-1,2-Dichloroethene	156-59-2	<1.4	<1.5	<1.5	<1.5	1.5	3.90E-06	1.71E-05	1.4	3.64E-06	1.60E-05	No
cis-1,3-Dichloropropene	10061-01-5	<3.9	<4.2	<4.2	<4.2	4.2	1.09E-05	4.79E-05	3.9	1.02E-05	4.45E-05	No
Cyclohexane	110-82-7	<2.9	<3.2	<3.2	<3.2	3.2	8.33E-06	3.65E-05	2.9	7.55E-06	3.31E-05	No
Dibromochloromethane	124-48-1	<2.9	<3.1	<3.1	<3.2	3.2	8.33E-06	3.65E-05	2.9	7.55E-06	3.31E-05	No
Dichlorodifluoromethane	75-71-8	7.7	9.4	13.4	3.2	13.4	3.49E-05	1.53E-04	7.7	2.00E-05	8.78E-05	No
Ethanol	64-17-5	5.7	54.3	59.9	34.7	59.9	1.56E-04	6.83E-04	5.7	1.48E-05	6.50E-05	No
Ethyl acetate	141-78-6	<1.2	<1.3	<1.3	<1.3	1.3	3.38E-06	1.48E-05	1.2	3.12E-06	1.37E-05	No
Ethylbenzene	100-41-4	4.3	<4.0	<4.0	<4.0	4	1.04E-05	4.56E-05	4.3	1.12E-05	4.90E-05	Yes
Freon TF	76-13-1	<2.6	<2.8	<2.8	<2.9	2.9	7.55E-06	3.31E-05	2.6	6.77E-06	2.96E-05	No
Hexachlorobutadiene	87-68-3	<9.1	<9.8	<9.8	<9.9	9.9	2.58E-05	1.13E-04	9.1	2.37E-05	1.04E-04	Yes
Isopropyl alcohol	67-63-0	<4.2	<4.5	5.3	<4.6	5.3	1.38E-05	6.04E-05	4.2	1.09E-05	4.79E-05	No
m- & p-Xylenes	179601-23-1	18.3	<7.9	<7.9	<8.1	8.1	2.11E-05	9.24E-05	8.3	2.16E-05	9.46E-05	Xylenes (total)
Methylene chloride	75-09-2	<5.9	<6.4	<6.4	<6.5	6.5	1.69E-05	7.41E-05	5.9	1.54E-05	6.73E-05	Yes
Methyl-tert-butyl ether	1634-04-4	<6.1	<6.6	<6.6	<6.7	6.7	1.74E-05	7.64E-05	6.1	1.59E-05	6.96E-05	Yes
Naphthalene	91-20-3	<4.5	<4.8	<4.8	<4.9	4.9	1.28E-05	5.59E-05	4.5	1.17E-05	5.13E-05	Yes
n-Heptane	142-82-5	<1.4	<1.5	<1.5	<1.5	1.5	3.90E-06	1.71E-05	1.4	3.64E-06	1.60E-05	No
n-Hexane	110-54-3	<1.2	<1.3	<1.3	<1.3	1.3	3.38E-06	1.48E-05	1.2	3.12E-06	1.37E-05	Yes
o-Xylene	95-47-6	2.6	<1.6	<1.6	<1.6	1.6	4.17E-06	1.82E-05	2.6	6.77E-06	2.96E-05	Xylenes (total)
Propylene	115-07-1	<1.5	<1.6	<1.6	<1.6	1.6	4.17E-06	1.82E-05	1.5	3.90E-06	1.71E-05	No
Styrene	100-42-5	<1.5	<1.6	<1.6	<1.6	1.6	4.17E-06	1.82E-05	1.5	3.90E-06	1.71E-05	Yes
Tetrachloroethene	127-18-4	11.4	<1.2	<1.2	<1.3	1.3	3.38E-06	1.48E-05	1.4	3.64E-06	1.60E-05	Yes
Tetrahydrofuran	109-99-9	<1.0	<1.1	<1.1	<1.1	1.1	2.86E-06	1.25E-05	1	2.60E-06	1.14E-05	No
Toluene	108-88-3	<1.3	<1.4	<1.4	<1.4	1.4	3.64E-06	1.60E-05	1.3	3.38E-06	1.48E-05	Yes
trans-1,2-Dichloroethene	156-60-5	182	288	288	381	381	9.92E-04	4.34E-03	182	4.74E-04	2.08E-03	No
trans-1,3-Dichloropropene	10061-02-6	<3.9	<4.2	<4.2	<4.2	4.2	1.09E-05	4.79E-05	3.9	1.02E-05	4.45E-05	No
Trichloroethene	79-01-6	<0.92	<0.98	22.5	9.6	22.5	5.86E-05	2.57E-04	0.92	2.39E-06	1.05E-05	Yes
Trichlorofluoromethane	75-69-4	<1.9	<2.1	<2.1	<2.1	2.1	5.47E-06	2.39E-05	1.9	4.95E-06	2.17E-05	No
Vinyl acetate	108-05-4	<1.2	<1.3	<1.3	<1.3	1.3	3.38E-06	1.48E-05	1.2	3.12E-06	1.37E-05	Yes
Vinyl chloride	75-01-4	<0.44	<0.47	<0.47	<0.48	0.48	1.25E-06	5.47E-06	0.44	1.15E-06	5.02E-06	Yes
Xylenes total	1330-20-7					9.7	2.53E-05	1.11E-04	10.9	2.84E-05	1.24E-04	Yes
Conversion												
6.24E-11 lb/ft3 per ug/m3				**Total HAPs**		727.25	4.97E-04	2.18E-03	378.63	2.86E-04	1.25E-03	

Control eq capture efficiency[0]	95%	
SH emission safety factor	1.00	
Roof vent emission safety factor[0]	1.00	

2021 Nederman Inlet Test Result	
PM EF (lb/lb metal)	1.85E-04
PM EF (lb/ton metal)[7]	3.70E-01
Nederman Control Efficiency[8]	86.6%

2018 Lead Stack Test Results	
Lead EF (lb/lb metal)	2.04E-06 Inlet
Lead EF (lb/lb metal)	6.13E-07 Outlet
Effective Lead Control Efficiency	70%

Emissions from Building
Modeling Stack Emission Rates

Linked to Point Source Param (AQDM-02)

EQUI	Diecasting Equipment ID	Single Pass (SP) or Double Pass (DP)	SH STRU #	Smog Hog # (DP or SP)	Nederman #	Vent #	Vent STRU #	Unrestricted Machine Maximum Capacity (ton/hr) [9]	Maximum Throughput (ton/hr) Short Term Capacity [5]	Hourly Lead Throughput (ton/hr) ANNUAL Average [6]	PM10/PM2.5 Uncontrolled Emission Factor (lb PM/ton lead (lb lead/lb lead to Nederman) input)	Uncontrolled Lead Emission Factor to N&SH	Maximum Uncontrolled PM 10/PM2.5 Emissions (lb/hr) [1,4]	Maximum Uncontrolled PM10/PM2.5 Emissions (tpy) [1,4]	Hourly Uncontrolled PM10/PM2.5 Diecast Emissions (lb/hr) [1,4]	Uncontrolled Uncaptured PM10/PM2.5 Diecast Emissions (tpy) [1,4]	Uncontrolled Uncaptured Hourly PM Roof Vent Emissions (lb/hr) [0]	Uncaptured Hourly PM Roof Vent Emissions (tpy)	Hourly Uncontrolled PM10/PM2.5 Smog Hog Emissions (lb/hr)	PM Control Efficiency	Hourly Controlled Smog Hog PM10/PM2.5 Emissions (lb/hr)	Long-term Limited Uncontrolled Diecast Lead Emissions (lb/hr)	Uncaptured Long-term Limited Lead Roof Vent Emissions (lb/hr) [0]	Long-term Limited Controlled Smog Hog Lead Emissions (lb/hr)	Daily and Quarterly Limited Uncontrolled Lead Diecast Emissions (lb/hr)	Daily and Quarterly Limited Lead Roof Vent Emissions (lb/hr)	Daily and Quarterly Limited Controlled Lead Smog Hog Emissions (lb/hr)	Unrestricted DC PM/PM10/PM 2.5 Emissions (tpy)	Unrestricted DC Lead Emissions (tpy)	STRU	Quarterly Annual Daily PM2.5 emissions (lb/hr)	Quarterly Annual Lead emission s (lb/hr)	Quarterly Annual Lead emissions (lb/hr)
121	DC09	SP	15	1 (SP) TREA25	1N TREA61	Vent 5	48	1.27	0.15	0.058	3.70E-01	2.04E-06	5.66E-02	2.48E-01	5.66E-02	2.48E-01	2.83E-03	1.24E-02	5.38E-02	86.57%	7.22E-03	2.50E-04	1.25E-05	7.12E-05	6.24E-04	3.12E-05	1.78E-04	2.17	2.39E-02	15	0.0389	9.58E-04	3.83E-04
122	DC12	SP	15	1 (SP)	1N	Vent 5	48	1.46	0.44	0.174	3.70E-01	2.04E-06	1.70E-01	7.44E-01	1.70E-01	7.44E-01	8.50E-03	3.72E-02	1.61E-01	86.57%	2.17E-02	7.50E-04	3.75E-05	2.14E-04	1.87E-03	9.37E-05	5.34E-04	2.49	2.75E-02	16	0.0639	1.57E-03	6.30E-04
123	DC33	SP	15	1 (SP)	1N	Vent 6	49	1.67	0.20	0.080	3.70E-01	2.04E-06	7.82E-02	3.42E-01	7.82E-02	3.42E-01	3.91E-03	1.71E-02	7.43E-02	86.57%	9.97E-03	3.45E-04	1.72E-05	9.83E-05	8.62E-04	4.31E-05	2.46E-04	2.85	3.14E-02	17	0.0186	4.59E-04	1.84E-04
124	DC14	SP	16	2 (SP) TREA25	2N TREA61	Vent 7	43	0.73	0.25	0.100	3.70E-01	2.04E-06	9.74E-02	4.27E-01	9.74E-02	4.27E-01	4.87E-03	2.13E-02	9.26E-02	86.57%	1.24E-02	4.30E-04	2.15E-05	1.23E-04	1.07E-03	5.37E-05	3.06E-04	1.24	1.36E-02	74	0.0208	5.14E-04	2.05E-04
125	DC15	SP	16	2 (SP) TREA26	2N TREA61	Vent 8	50	1.68	0.12	0.047	3.70E-01	2.04E-06	4.55E-02	1.99E-01	4.55E-02	1.99E-01	2.28E-03	9.97E-03	4.33E-02	86.57%	5.81E-03	2.01E-04	1.00E-05	5.73E-05	5.02E-04	2.51E-05	1.43E-04	2.86	3.16E-02	20	0.0252	6.22E-04	2.49E-04
126	DC21	SP	16	2 (SP) TREA26	2N TREA63	Vent 8	50	2.27	0.27	0.106	3.70E-01	2.04E-06	1.03E-01	4.53E-01	1.03E-01	4.53E-01	5.17E-03	2.26E-02	9.82E-02	86.57%	1.32E-02	4.56E-04	2.28E-05	1.30E-04	1.14E-03	5.70E-05	3.25E-04	3.87	4.27E-02	75	0.0335	8.25E-04	3.30E-04
127	DC08	SP	17	3 (SP) TREA26	3N TREA63	Vent 4	47	1.45	0.06	0.026	3.70E-01	2.04E-06	2.52E-02	1.11E-01	2.52E-02	1.11E-01	1.26E-03	5.53E-03	2.40E-02	86.57%	3.22E-03	1.11E-04	5.57E-06	3.17E-05	2.78E-04	1.39E-05	7.94E-05	2.47	2.73E-02	23	0.0222	5.48E-04	2.19E-04
128	DC10	SP	17	3 (SP) TREA26	3N TREA62	Vent 4	47	1.27	0.20	0.080	3.70E-01	2.04E-06	7.79E-02	3.41E-01	7.79E-02	3.41E-01	3.89E-03	1.71E-02	7.40E-02	86.57%	9.94E-03	3.44E-04	1.72E-05	9.79E-05	8.59E-04	4.30E-05	2.45E-04	2.17	2.39E-02	24	0.0220	5.43E-04	2.17E-04
129	DC17	SP	17	3 (SP) TREA27	3N TREA64	Vent 4	47	1.27	0.11	0.044	3.70E-01	2.04E-06	4.30E-02	1.88E-01	4.30E-02	1.88E-01	2.15E-03	9.42E-03	4.09E-02	86.57%	5.49E-03	1.90E-04	9.49E-06	5.41E-05	4.75E-04	2.37E-05	1.35E-04	2.17	2.39E-02	25	0.0264	6.51E-04	2.60E-04
130	DC18	SP	74	3 (SP) TREA25	3N TREA65	Vent 1	44	0.64	0.10	0.041	3.70E-01	2.04E-06	3.98E-02	1.74E-01	3.98E-02	1.74E-01	1.99E-03	8.72E-03	3.78E-02	86.57%	5.08E-03	1.76E-04	8.78E-06	5.01E-05	4.39E-04	2.20E-05	1.25E-04	1.09	1.20E-02	26	0.0552	1.36E-03	5.44E-04
131	DC36	SP	74	3 (SP) TREA26	3N TREA65	Vent 1	44	3.73	0.32	0.127	3.70E-01	2.04E-06	1.24E-01	5.41E-01	1.24E-01	5.41E-01	6.18E-03	2.71E-02	1.17E-01	86.57%	1.58E-02	5.45E-04	2.73E-05	1.55E-04	1.36E-03	6.82E-05	3.89E-04	6.36	7.02E-02	30	0.0605	1.49E-03	5.96E-04
132	DC37	SP	20	5 (SP) TREA30	5N TREA66	Vent 1	44	2.51	0.28	0.111	3.70E-01	2.04E-06	1.08E-01	4.72E-01	1.08E-01	4.72E-01	5.38E-03	2.36E-02	1.02E-01	86.57%	1.37E-02	4.75E-04	2.37E-05	1.35E-04	1.19E-03	5.94E-05	3.38E-04	4.28	4.72E-02	31	0.0298	7.35E-04	2.94E-04
133	DC25	SP	20	5 (SP) TREA30	5N TREA66	Vent 1	44	2.18	0.23	0.093	3.70E-01	2.04E-06	9.01E-02	3.95E-01	9.01E-02	3.95E-01	4.51E-03	1.97E-02	8.56E-02	86.57%	1.15E-02	3.98E-04	1.99E-05	1.13E-04	9.94E-04	4.97E-05	2.83E-04	3.71	4.09E-02	32	0.0301	7.41E-04	2.96E-04
134	DC22	SP	75	8 (SP) TREA31	8N TREA67	Vent 1	44	2.32	0.23	0.091	3.70E-01	2.04E-06	8.82E-02	3.86E-01	8.82E-02	3.86E-01	4.41E-03	1.93E-02	8.38E-02	86.57%	1.13E-02	3.89E-04	1.95E-05	1.11E-04	9.73E-04	4.87E-05	2.77E-04	3.96	4.37E-02	33	0.0537	1.32E-03	5.29E-04
135	DC35	SP	75	8 (SP) TREA31	8N TREA67	Vent 1	44	6.38	0.45	0.179	3.70E-01	2.04E-06	1.74E-01	7.63E-01	1.74E-01	7.63E-01	8.71E-03	3.81E-02	1.65E-01	86.57%	2.22E-02	7.69E-04	3.84E-05	2.19E-04	1.92E-03	9.61E-05	5.48E-04	10.88	1.20E-01	34	0.0575	1.42E-03	5.67E-04
136	DC32	SP	23	9 (SP) TREA33	9N TREA68	Vent 1	44	3.18	0.45	0.179	3.70E-01	2.04E-06	1.74E-01	7.63E-01	1.74E-01	7.63E-01	8.71E-03	3.81E-02	1.65E-01	86.57%	2.22E-02	7.69E-04	3.84E-05	2.19E-04	1.92E-03	9.61E-05	5.48E-04	5.43	5.99E-02	35	0.0023	4.41E-03	1.07E-04
137	DC26	SP	24	10 (SP)	10N	Vent 2	45	1.85	0.17	0.066	3.70E-01	2.04E-06	6.44E-02	2.82E-01	6.44E-02	2.82E-01	3.22E-03	1.41E-02	6.12E-02	86.57%	8.22E-03	2.84E-04	1.42E-05	8.10E-05	7.11E-04	3.55E-05	2.02E-04	3.16	3.48E-02	43	0.0049	5.37E-05	2.15E-05
138	DC27	SP	24	10 (SP)	10N	Vent 2	45	2.39	0.28	0.111	3.70E-01	2.04E-06	1.08E-01	4.74E-01	1.08E-01	4.74E-01	5.41E-03	2.37E-02	1.03E-01	86.57%	1.38E-02	4.77E-04	2.39E-05	1.36E-04	1.19E-03	5.97E-05	3.40E-04	4.08	4.50E-02	44	0.0399	4.40E-04	1.76E-04
139	DC16	SP	25	11 (SP) TREA34	11N TREA69	Vent 2	45	2.72	0.30	0.119	3.70E-01	2.04E-06	1.16E-01	5.09E-01	1.16E-01	5.09E-01	5.81E-03	2.55E-02	1.10E-01	86.57%	1.48E-02	5.13E-04	2.56E-05	1.46E-04	1.28E-03	6.41E-05	3.65E-04	4.64	5.12E-02	45	0.0262	2.89E-04	1.16E-04
140	DC28	SP	25	11 (SP) TREA34	11N TREA69	Vent 2	45	1.83	0.23	0.093	3.70E-01	2.04E-06	9.07E-02	3.97E-01	9.07E-02	3.97E-01	4.54E-03	1.99E-02	8.62E-02	86.57%	1.16E-02	4.00E-04	2.00E-05	1.14E-04	1.00E-03	5.00E-05	2.85E-04	3.13	3.45E-02	46	0.0144	1.59E-04	6.37E-05
141	DC29	SP	26	12 (SP) TREA35	12N TREA70	Vent 2	45	2.39	0.37	0.148	3.70E-01	2.04E-06	1.44E-01	6.32E-01	1.44E-01	6.32E-01	7.21E-03	3.16E-02	1.37E-01	86.57%	1.84E-02	6.36E-04	3.18E-05	1.81E-04	1.59E-03	7.95E-05	4.53E-04	4.08	4.50E-02	47	0.0073	8.06E-05	3.22E-05
142	DC19	SP	26	12 (SP) TREA35	12N TREA70	Vent 3	46	2.61	0.28	0.111	3.70E-01	2.04E-06	1.08E-01	4.74E-01	1.08E-01	4.74E-01	5.42E-03	2.37E-02	1.03E-01	86.57%	1.38E-02	4.78E-04	2.39E-05	1.36E-04	1.19E-03	5.97E-05	3.40E-04	4.45	4.91E-02	48	0.0113	1.25E-04	5.00E-05
143	DC34	SP	26	12 (SP) TREA36	12N TREA71	Vent 3	46	2.35	0.23	0.093	3.70E-01	2.04E-06	9.01E-02	3.95E-01	9.01E-02	3.95E-01	4.51E-03	1.97E-02	8.56E-02	86.57%	1.15E-02	3.98E-04	1.99E-05	1.13E-04	9.94E-04	4.97E-05	2.83E-04	4.01	4.43E-02	49	0.0039	4.31E-05	1.72E-05
146	DC42	SP	30	15 (SP) TREA39	15N TREA75	Vent 11	53	6.38	0.60	0.240	3.70E-01	2.04E-06	2.34E-01	1.02E+00	2.34E-01	1.02E+00	1.17E-02	5.12E-02	2.22E-01	86.57%	2.98E-02	1.03E-03	5.16E-05	2.94E-04	2.58E-03	1.29E-04	7.35E-04	10.88	1.20E-01	50	0.0074	8.22E-05	3.29E-05
147	DC38	SP	31	17 (SP) TREA40	17N TREA71	Vent 10	52	3.18	0.60	0.240	3.70E-01	2.04E-06	2.34E-01	1.02E+00	2.34E-01	1.02E+00	1.17E-02	5.12E-02	2.22E-01	86.57%	2.98E-02	1.03E-03	5.16E-05	2.94E-04	2.58E-03	1.29E-04	7.35E-04	5.43	5.99E-02	51	0.0379	4.18E-04	1.67E-04
149	DC40	SP	32	18 (SP)	18N	Vent 9	51	1.68	0.30	0.119	3.70E-01	2.04E-06	1.16E-01	5.09E-01	1.16E-01	5.09E-01	5.81E-03	2.55E-02	1.10E-01	86.57%	1.48E-02	5.13E-04	2.56E-05	1.46E-04	1.28E-03	6.41E-05	3.65E-04	2.86	3.16E-02	52	0.0237	2.61E-04	1.05E-04
150	DC48	SP	32	18 (SP) TREA40	18N TREA74	Vent 11	53	2.80	0.31	0.123	3.70E-01	2.04E-06	1.19E-01	5.23E-01	1.19E-01	5.23E-01	5.97E-03	2.62E-02	1.13E-01	86.57%	1.52E-02	5.27E-04	2.64E-05	1.50E-04	1.32E-03	6.59E-05	3.76E-04	4.78	5.27E-02	53	0.0177	1.95E-04	7.79E-05
152	DC41	SP	33	19 (SP) TREA41	19N TREA75	Vent 9	51	3.73	0.65	0.261	3.70E-01	2.04E-06	2.54E-01	1.11E+00	2.54E-01	1.11E+00	1.27E-02	5.57E-02	2.42E-01	86.57%	3.24E-02	1.12E-03	5.61E-05	3.20E-04	2.81E-03	1.40E-04	8.00E-04	6.36	7.02E-02	56	0.0242	2.67E-04	1.07E-04
153	DC44	DP	34	20 (DP) TREA42	20N TREA76	Vent 14	56	2.29	0.59	0.236	3.70E-01	2.04E-06	2.30E-01	1.01E+00	2.30E-01	1.01E+00	1.15E-02	5.03E-02	2.18E-01	86.57%	2.93E-02	1.01E-03	5.07E-05	2.89E-04	2.54E-03	1.27E-04	7.23E-04	3.91	4.31E-02					
154	DC45	DP	34	20 (DP) TREA42	20N TREA76	Vent 9	51	5.65	0.57	0.227	3.70E-01	2.04E-06	2.21E-01	9.67E-01	2.21E-01	9.67E-01	1.10E-02	4.83E-02	2.10E-01	86.57%	2.82E-02	9.74E-04	4.87E-05	2.78E-04	2.43E-03	1.22E-04	6.94E-04	9.64	1.06E-01					
155	DC52	SP	26	12 (SP) TREA 43	12N TREA77	Vent 3	46	2.39	0.23	0.093	3.70E-01	2.04E-06	9.01E-02	3.95E-01	9.01E-02	3.95E-01	4.51E-03	1.97E-02	8.56E-02	86.57%	1.15E-02	3.98E-04	1.99E-05	1.13E-04	9.94E-04	4.97E-05	2.83E-04	4.08	4.50E-02					
156	DC51	SP	16	2 (SP) TREA26	2N TREA72	Vent 14	56	4.97	0.65	0.261	3.70E-01	2.04E-06	2.54E-01	1.11E+00	2.54E-01	1.11E+00	1.27E-02	5.57E-02	2.42E-01	86.57%	3.24E-02	1.12E-03	5.61E-05	3.20E-04	2.81E-03	1.40E-04	8.00E-04	8.48	9.36E-02					
158	DC53	SP	30	15 (SP) TREA39	15N TREA73	Vent 10	52	2.80	0.62	0.247	3.70E-01	2.04E-06	2.40E-01	1.05E+00	2.40E-01	1.05E+00	1.20E-02	5.26E-02	2.28E-01	86.57%	3.07E-02	1.06E-03	5.30E-05	3.02E-04	2.65E-03	1.33E-04	7.55E-04	4.78	5.27E-02					
160	Billet Saw	SP	35	NA	NA	NA	NA	2.03	0.50	0.012	4.50E-03	4.41E-06	2.25E-03	9.86E-03	2.25E-03	9.86E-03	NA	NA	2.25E-03	0.00%	2.25E-03	1.07E-04	NA	1.07E-04	4.41E-03	NA	4.41E-03	0.04	7.85E-02					

TREA26 TREA62

Notes

0. Consistent with prior submitals, we assume 5% of uncontrolled diecast emissions escape uncaptured to roof vents. Based on AP-42 Footnote a. to Table 12.11-4; 10/86.
1. Uncontrolled emissions account for testing done at inlet that "misses" the uncaptured emissions
2. For diecasting, it is assumed that PM = PM10 = PM2.5. For the billet saw, PM10 = PM2.5 = 0.51* PM.
3. Billet saw emissions based on PM10 Emission Factor from EP-450/4-022 PM10 Emisison Factor Listing Developed by Technology Transfer 1995 (lb/ton). Total Particulate emission factor calculated based on Table B.2.2 AP42 PM10 assumed to be 51% PM. Lead assumed to be 100% of PM based on component of material.
4. 2021 stack test represents the conditions at the inlet of the Nederman (uncontrolled conditions). Total uncontrolled diecast emissions are calculated from the inlet conditions divided by assumed capture efficiency (95%).
5. The maximum lead throughput short term capacity represents the maximum hourly production level for diecast lb/hr emission rates; these throughputs are used in PM and lead NAAQS modeling.
6. The hourly lead throughput annual average value represents approximate annual average throughput rates; the emissions from these throughput rates are summed and modeled at the worst-case smog hog and exhaust vent to support a facility-wide annual throughput limit for the facility.
7. The particulate matter emission factor used is the highest average emission factor from the June or September 2021 stack tests. The June 2021 average emission factor was 0.3702 lb PM $_{10}$/ton, see *Comprehensive Emissions Test Report* , revised September 2, 2021, Table 2.
8. Nederman control efficiency used is the lowest control efficiency from any run in the June or September 2021 stack tests. The September 2021 Run 2 stack test control efficiency was 86.6%.
9. The machine maximum capacity is the die cast machine unrestricted, uncontrolled maximum throughput. It is not theoretical and not actually achievable.

Press Number	Application	Manufacturer	DC Number	Ton	#/Shot	Shot/ 8-hour Sift	Rated Capacity (#Pb/hr)
8	Die Cast	Prince	DC08	450	29	800	2900
9	Die Cast	B&T	DC09	464	29	700	2538
10	Die Cast	Prince	DC10	450	29	700	2538
12	Die Cast	B&T	DC12	250	33.4	700	2923
14	Die Cast	B&T	DC14	250	23.2	500	1450
15	Die Cast	B&T	DC15	400	24.4	1100	3355
16	Die Cast	B&T	DC16	607	34.8	1250	5438
17	Die Cast	B&T	DC17	250	29	700	2538
18	Die Cast	B&T	DC18	250	14.6	700	1278
19	Die Cast	B&T	DC19	400	33.4	1250	5219
21	Die Cast	Prince	DC21	400	29	1250	4531
22	Die Cast	Prince	DC22	836	61.9	600	4643
23	Die Cast	Prince	DC23	1043	40.7	1250	6359
25	Die Cast	Prince	DC25	836	34.8	1000	4350
26	Die Cast	Prince	DC26	836	34.8	850	3698
27	Die Cast	Prince	DC27	632	34.8	1100	4785
28	Die Cast	Prince	DC28	632	29.3	1000	3663
29	Die Cast	Prince	DC29	836	34.8	1100	4785
32	Die Cast	Prince	DC32	1242	40.7	1250	6359
33	Die Cast	Prince	DC33	828	33.4	800	3340
34	Die Cast	B&T	DC34	650	34.2	1100	4703
35	Die Cast	Prince	DC35	1242	81.6	1250	12750
36	Die Cast	Prince	DC36	1246	47.7	1250	7453
37	Die Cast	Prince	DC37	528	33.4	1200	5010
38	Die Cast	Prince	DC38	1446	40.7	1250	6359
39	Die Cast	B&T	DC39	600	58.1	1100	7989
40	Die Cast	B&T	DC40	600	24.4	1100	3355
41	Die Cast	Prince	DC41	1446	47.7	1250	7453
42	Die Cast	Prince	DC42	1446	81.6	1250	12750
44	Die Cast	Prince	DC44	1242	40.7	900	4579
45	Die Cast	Prince	DC45	1446	72.3	1250	11297
48	Die Cast	Prince	DC48	629	40.7	1100	5596
50	Die Cast	Prince	DC50	1242	40.7	1100	5596
51	Die Cast	Prince	DC51	1246	72.3	1100	9941
52	Die Cast	Prince	DC52	632	34.8	1100	4785
53	Die Cast	Prince	DC53	1446	40.7	1100	5596
			Billet Saw				

This equipment does not have emission points. Coining and Cold Form use pressure to mold parts fr

CF1	Cold Form
CF2	Cold Form
CF3	Cold Form

Coining	Coining

Rated Capacity (Tons/hr)	Rated Capacity (Tons/yr)
1.45	12702
1.27	11114
1.27	11114
1.46	12801
0.73	6351
1.68	14695
2.72	23816
1.27	11114
0.64	5595
2.61	22858
2.27	19847
2.32	20334
3.18	27854
2.18	19053
1.85	16195
2.39	20958
1.83	16042
2.39	20958
3.18	27854
1.67	14629
2.35	20597
6.38	55845
3.73	32645
2.51	21944
3.18	27854
3.99	34991
1.68	14695
3.73	32645
6.38	55845
2.29	20055
5.65	49480
2.80	24512
2.80	24512
4.97	43543
2.39	20958
2.798	24512
2.030	
	840,516.5250

#/hr and Shots/hr from Manufacturing Engineering

om lead wire.

Water Gremlin Company
Die Casting/Gravity Casting: Potential Emission Calculations
Date:01/22/2021 revised 9/14/2021 revised 5/19/2022

Annual throughput factor: **40.0%**

Total throughput (lb/yr): 78,711,001.78

EQUI	Die Casting Equipment ID	Single Pass (SP) or Double Pass (DP)	STRU #	Smog Hog # (DP or SP)	Unrestricted Machine Max Capacity (tph)	Limited Daily Maximum Throughput (lb/day)	Limited Daily Maximum Throughput (tph)	Revised Tons Throughput Per hour, ANNUAL average
121	DC09				1.27	6972.69	0.15	0.058
122	DC12	SP	15	1 (SP) TREA25	1.46	20930.40	0.44	0.174
123	DC33				1.87	9629.68	0.20	0.080
124	DC14				0.73	12000.00	0.25	0.100
125	DC15	SP	16	2 (SP) TREA26	1.68	5610.00	0.12	0.047
126	DC21				2.27	12738.42	0.27	0.106
127	DC08				1.45	3109.40	0.06	0.026
128	DC10	SP	17	3 (SP) TREA27	1.27	9593.02	0.20	0.080
129	DC17				1.27	5300.00	0.11	0.044
130	DC18	SP	19	5 (SP) TREA29	0.64	4903.14	0.10	0.041
131	DC36	SP	19	5 (SP) TREA29	3.73	15222.39	0.32	0.127
132	DC37				2.51	13260.00	0.28	0.111
133	DC25	SP	20	6 (SP) TREA30	2.18	11100.64	0.23	0.093
134	DC22	SP	22	8 (SP) TREA32	2.32	10868.51	0.23	0.091
135	DC35	SP	22	8 (SP) TREA32	6.38	21455.09	0.45	0.179
136	DC32	SP	23	9 (SP) TREA33	3.18	21455.09	0.45	0.179
137	DC26	SP	24	10 (SP) TREA34	1.85	7934.27	0.17	0.066
138	DC27				2.39	13326.82	0.28	0.111
139	DC16	SP	25	11 (SP) TREA35	2.72	14320.72	0.30	0.119
140	DC28				1.83	11174.90	0.23	0.093
141	DC29				2.39	17763.30	0.37	0.148
142	DC19	SP	26	12 (SP) TREA36	2.61	13341.60	0.28	0.111
143	DC34				2.35	11100.64	0.23	0.093
146	DC42	SP	30	16 (SP) TREA39	6.38	28791.76	0.60	0.240
147	DC38	SP	31	17 (SP) TREA40	3.18	28791.76	0.60	0.240
149	DC40	SP	32	18 (SP) TREA41	1.68	14320.72	0.30	0.119
150	DC48				2.80	14714.59	0.31	0.123
152	DC41	SP	33	19 (SP) TREA42	3.73	31326.57	0.65	0.261
153	DC44	DP	34	20 (DP) TREA 43	2.29	28316.42	0.59	0.236
154	DC45				5.65	27189.69	0.57	0.227
155	DC52	SP	26	14 (SP) TREA44	2.39	11100.64	0.23	0.093
156	DC50	SP	33	22 (SP) TREA42	2.80	20525.29	0.43	0.171
157	DC51	SP	16	23 (SP) TREA26	4.97	31326.57	0.65	0.261
158	DC53	SP	30	25 (SP) TREA39	2.80	29601.71	0.62	0.247
160	Billet Saw	SP	35	21 (SP) TREA44	2.03	18000.00	0.50	0.012
Total				---	**90.81**	**557116.45**	**11.73**	**4.58**

Notes:

Water Gremlin Daily Throughputs (lb/day)

Diecast Process

Smog Machine		Daily Thro	Hourly Throughput (lb/hr)	
3	DC08	3,109	129.56	x
1	DC09	6,973	290.53	x
3	DC10	9,593	399.71	x
1	DC12	20,930	872.10	x
2	DC14	12,000	500.00	x
2	DC15	5,610	233.75	x
11	DC16	14,321	596.70	x
3	DC17	5,300	220.83	x
4	DC18	4,903	204.30	x
12	DC19	13,342	555.90	x
2	DC21	12,738	530.77	x
7	DC22	10,869	452.85	x
6	DC25	11,101	462.53	x
10	DC26	7,934	330.59	x
10	DC27	13,327	555.28	x
11	DC28	11,175	465.62	x
12	DC29	17,763	740.14	x
9	DC32	21,455	893.96	x
1	DC33	9,630	401.24	x
12	DC34	11,101	462.53	x
7	DC35	21,455	893.96	x
4	DC36	15,222	634.27	x
6	DC37	13,260	552.50	x
17	DC38	28,792	1,199.66	x
18	DC40	14,321	596.70	x
19	DC41	31,327	1,305.27	x
16	DC42	28,792	1,199.66	x
20	DC44	28,316	1,179.85	x
20	DC45	27,190	1,132.90	x
18	DC48	14,715	613.11	x
19	DC50	20,525	855.22	x
2	DC51	31,327	1,305.27	x
12	DC52	11,101	462.53	x
16	DC53	29,602	1,233.40	x

Water Gremlin
Coining Operation Emissions - Particulate Matter
Potential to Emit
EQUI 223 - EQUI 232, STRU 71

Unit	Lubricant [1]	Exhaust Flow (cfm)	How Applied [2]	Maximum Capacity (lb/hr product)	PM Potential Emissions [3, 4] (lb/hr)	PM Potential Emissions [3, 4] (ton/yr)
Coiner 1	Vanishing Oil	300	Sprayed	55	0.0032	0.0139
Coiner 2	Vanishing Oil	150	Bath	40	-	-
Coiner 3	Vanishing Oil	150	Bath	46	-	-
Coiner 4	Vanishing Oil	150	Bath	17	-	-
Coiner 5	Vanishing Oil	150	Bath	48	-	-
Coiner 6	Vanishing Oil	300	Sprayed	62	0.0036	0.0157
Coiner 7	Vanishing Oil	300	Sprayed	52	0.0030	0.0131
Coiner 8	Vanishing Oil	300	Sprayed	79	0.0046	0.020
Coiner 9	Vanishing Oil	300	Sprayed	194	0.0112	0.049
Coiner 10	Vanishing Oil	300	Sprayed	138	0.0080	0.035
				Total	**0.033**	**0.147**

1. Water Gremlin confirmed that all machines use Vanishing Oil (only) as lubricant. Prior use of Kerosene (when coining machines were at North Campus) has been discontinued.
2. Bath (Trough) machines assumed to produce zero PM emissions.
3. PM Emissions are assumed to be 100% in PM2.5 size category. That is, PM = PM10 = PM2.5.
4. Margin of Safety of 100% has been added for conservatism (e.g., to account for differences between machines and to account for condensable PM). Condensable emissions were not able to be measured with Particle Counter, but are believed to be low or zero due to non-heated nature of coining process and no combustion occuring.

PM Emission Rate used for Modeling: **0.033** lb/hr
(as PM2.5 or PM10)

Water Gremlin
Coining Operation Emissions - Particulate Matter
Based on Water Gremlin Particle Counter & Velocity Measurements - 7/30/2021
8/19/2021

Safety Factor (for Conservatism)[7]: 2

Unit	Stack Exit Velocity (ft/min)[1]	Stack Diameter (ft)	Stack Flow Rate (acfm)	(scfm)[2]	(standard m^3/hr)	Stack Temp (deg F)[3]	PM Counter Measurement During Operation (mg/m^3)[4]	PM Counter - Idle (Room Air or Background) (mg/m^3)[4]	PM Counter: Operation minus Background (mg/m^3)	PM Emission Rate (lb/hr)[5]	Production Rate[6] (lb/hr product)	Emission Factor (lb PM/lb product)	Emission Factor with Added Margin of Safety (lb PM/lb product)
Coiner 1	1450	0.5	285	274	466	90	1.80	0.252	1.548	0.0016	55	2.89E-05	5.77E-05
Coiner 10	1460	0.5	287	276	469	90	2.04	0.253	1.787	0.0018	138	1.34E-05	2.67E-05
											Maximum	2.89E-05	5.77E-05
											Average	2.11E-05	4.22E-05

1. Measured by Tim Harding, Water Gremlin, using TSI Velocicalc model 8350. Duct diameter given as 6" between each machine and combined duct from all machines to stack.
2. Standard temperature and pressure assumed to be 70 degrees F and 1 atmosphere. Atmospheric pressure effects excluded in calculation.
3. Per Tim Harding email, 7 degrees rise in coining room from ambient outside. Assume 90 degrees for the day of testing.
4. Measured by Tim Harding using TSI Dustrak II model 8532.
5. Calculated by converting PM counter results to mass emission rate based on scfm flow rate.
6. Production Rates per machine provided by Tim Harding.
7. Safety factor of 2 has been added for conservatism (e.g., to account for differences between machines and to account for condensable PM). Condensable emissions were not able to be measured with Particle Counter, but are believed to be low or zero due to non-heated nature of coining process and no combustion occuring.

Emission Factor used for PTE Calculations: 5.77E-05 (lb PM/lb product)

Conversions
dscfm = acfm * (460 R + 70)/(460 R + 90)
m3 = cf * (1/3.2808)^3*60
lb = mg * 0.0000022

Water Gremlin Company
Natural Gas External Combustion Units: Potential Emission Calculations

Each individual natural gas combustion unit qualifies as an Insignificant Activity pursuant to Minn. R. 7007.1300, subp. 3(F).

North Building Heating information

Fuel:	Natural Gas	
Total Heat Capacity:	10.69	MMBtu/hr
Heat Value:	1020	MMBtu/MMscf
Operation Limit:	8760	hr/yr

Pollutant	Emission Factor (lb/MMscf)	Uncontrolled Emission Rate (lb/hr)	Maximum Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Maximum Controlled Emissions (lb/hr)	Maximum Controlled Emissions (tpy)
PM	7.6	0.07966	0.35	0.0%	0.080	0.35
PM_{10}	7.6	0.07966	0.35	0.0%	0.080	0.35
$PM_{2.5}$	7.6	0.07966	0.35	0.0%	0.0797	0.35
SO_2	0.6	0.01	2.8E-02	0.0%	0.006	0.03
NO_x	100	1.05	4.59	0.0%	1.048	4.59
CO	84	0.88	3.86	0.0%	0.880	3.86
VOC	5.5	0.06	0.25	0.0%	0.058	0.25
Lead	0.0005	5.241E-06	2.296E-05		5.24E-06	2.30E-05

Hazardous Air Pollutant		Emission Factor (lb/MMscf)	Uncontrolled Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emissions (lb/hr)	Maximum Controlled Emissions (tons/yr)
Arsenic	7440-38-2	2.00E-04	2.1E-06	9.2E-06	0.0%	2.1E-06	9.2E-06
Benzene	71-43-2	2.10E-03	2.2E-05	9.6E-05	0.0%	2.2E-05	9.6E-05
Beryllium	7440-41-7	1.20E-05	1.3E-07	5.5E-07	0.0%	1.3E-07	5.5E-07
Cadmium	7440-43-9	1.10E-03	1.2E-05	5.1E-05	0.0%	1.2E-05	5.1E-05
Chromium	7440-47-3	1.40E-03	1.5E-05	6.4E-05	0.0%	1.5E-05	6.4E-05
Cobalt	7440-48-4	8.40E-05	8.8E-07	3.9E-06	0.0%	8.8E-07	3.9E-06
Dichlorobenzene	25321-22-6	1.20E-03	1.3E-05	5.5E-05	0.0%	1.3E-05	5.5E-05
Formaldehyde	50-00-0	7.50E-02	7.9E-04	3.4E-03	0.0%	7.9E-04	3.4E-03
Hexane	110-54-3	1.80	1.9E-02	8.3E-02	0.0%	1.9E-02	8.3E-02
Lead	7439-92-1	5.00E-04	5.2E-06	2.3E-05	0.0%	5.2E-06	2.3E-05
Manganese	7439-96-5	3.80E-04	4.0E-06	1.7E-05	0.0%	4.0E-06	1.7E-05
Mercury	7439-97-6	2.60E-04	2.7E-06	1.2E-05	0.0%	2.7E-06	1.2E-05
Naphthalene	91-20-3	6.10E-04	6.4E-06	2.8E-05	0.0%	6.4E-06	2.8E-05
Nickel	7440-02-0	2.10E-03	2.2E-05	9.6E-05	0.0%	2.2E-05	9.6E-05
POM	00-01-7	8.82E-05	9.2E-07	4.0E-06	0.0%	9.2E-07	4.0E-06
Selenium	7782-49-2	2.40E-05	2.5E-07	1.1E-06	0.0%	2.5E-07	1.1E-06
Toluene	108-88-3	3.40E-03	3.6E-05	1.6E-04	0.0%	3.6E-05	1.6E-04
Total HAPs		---	**1.98E-02**	**8.67E-02**	---	**1.98E-02**	**8.67E-02**

Notes:
Emission factors obtained from AP-42, Chapter 1.4, Tables 1.4-2, 1.4-3, 1.4-4 (07/98)

Pollutant	GWP	Emission Factor (lbs/MMBtu)	Maximum Uncontrolled Emissions (lb/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Controlled Emission Rate (tons/yr)
CO_2	1	116.98	1,251	5,478	0.00	1,251	5,478
CH_4	25	2.20E-03	0.0235	0.1030	0.00	2.35E-02	1.03E-01
N_2O	298	2.20E-04	0.00235	0.01030	0.00	2.35E-03	1.03E-02
Total GHG (CO_2e)			1,252.0	5,484	0.00	1,252.0	5,484

Notes:
Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Location: North Campus

Description	# of Units	Manufacturer	Model No	Btu/hr	Total Btu/hr	EQUI Number
RTU 1N	1	Lennox	GCS1651256P	125,000	125,000	EQUI177
RTU	1	Coleman Suncutter	7436-901	Cooling Only	0	N/A
RTU 2N	1	Carrier	48HJE008531	180,000	180,000	EQUI178
RTU 3N	1	Lennox	GCS1665375514	75,000	75,000	EQUI179
RTU 4N	1	Carrier	48TJE007601	115,000	115,000	EQUI180
RTU	1	Bryant	558CPX00600	Cooling Only	0	N/A
RTU	1	ComfortAire	40411	Electric	0	N/A
RTU 5N	1	Lennox	TGA08B2DH1Y	150,000	150,000	EQUI181
RTU 6N	1	InnerCity Products	PGMB04BH125IN1	125,000	125,000	EQUI182
RTU 7N	1	Carrier	48TJE012611	224,000	224,000	EQUI183
RTU	1	York	S3A020	Cooling Only	0	N/A
RTU	1	York	S3A020	Cooling Only	0	N/A
RTU 8N	1	Lennox	LGA156HS1G	260,000	260,000	EQUI184
RTU 9N	1	Lennox	LGA120HH1G	235,000	235,000	EQUI185
RTU 10N	1	Lennox	LGA156HS1G	260,000	260,000	EQUI186
RTU 11N	1	Bryant BDP	580DEV060115	115,000	115,000	EQUI187
RTU 12N	1	Snyder General	CUR100FN14	140,000	140,000	EQUI188
RTU 13N	1	Carrier	48HFT006510	120,000	120,000	EQUI189
RTU 14N	1	Lennox	GCS16-1353270SY	270,000	270,000	EQUI190
RTU 15N	1	Carrier	48HDT005510	120,000	120,000	EQUI191
RTU 16N	1	Carrier	48HDT005510	120,000	120,000	EQUI192
RTU 17N	1	Lennox	LGA120HH1G	235,000	235,000	EQUI193
RTU 18N	1	Detroit Radiant Prod Co	HL3-60-200	200,000	200,000	EQUI194
RTU 19N	1	Carrier	48HCTD14J2A6-0A0G0	240,000	240,000	EQUI195
RTU 20N	1	AO Smith	BTH-15ALV	150,000	150,000	EQUI196
RTU 21N	1	AO Smith	BTH-15ALV	150,000	150,000	EQUI197
RTU	1	Carrier, Cooling	PCV 030	0	0	N/A
RTU	1	Carrier, Cooling	PCV042	0	0	N/A
MAUs 12N, 13N	2	CaptiveAire	CAH20	1,424,348	2,848,696	EQUI198, EQUI199
MAU 14N	1	CaptiveAire	A2-D.500-G15-MPU	550,000	550,000	EQUI200
MAU 15N	1	Industrial Air	DAC120HRS	972,000	972,000	EQUI201
MAU 16N	1	Industrial Air	DAC122HRS	1,512,000	1,512,000	EQUI202
MAU 17N	1	TBD	TBD	350,000	350,000	
Space heater 1N	1	Lennox	LF24-150A-2	150,000	150,000	EQUI203
Space heater 2N	1	Lennox	LF24-150A-2	150,000	150,000	EQUI204
Space heater 3N	1	Dayton	3E134E	90,000	90,000	EQUI205
Space heater 4N	1	Enerco	ER2-6ON	60,000	60,000	EQUI206
Space heater 5N	1	Wire Heater	N/A	400,000	400,000	EQUI207
					10,691,696	

Total IA Natural Gas Sources (Criteria Pollutants)

Pollutant	Maximum Controlled Emissions (lb/hr)	Maximum Controlled Emissions (tpy)
PM	0.097	0.424
PM_{10}	0.097	0.424
$PM_{2.5}$	0.097	0.424
SO_2	0.008	0.033
NO_x	1.273	5.576
CO	1.069	4.684
VOC	0.070	0.307
Lead	0.000	0.000

Total IA Natural Gas (

Hazardous Air Pollutant		Controlled Emissions (lb/hr)	Maximum Controlled Emissions (tons/yr)
Arsenic	7440-38-2	2.5E-06	1.1E-05
Benzene	71-43-2	2.7E-05	1.2E-04
Beryllium	7440-41-7	1.5E-07	6.7E-07
Cadmium	7440-43-9	1.4E-05	6.1E-05
Chromium	7440-47-3	1.8E-05	7.8E-05
Cobalt	7440-48-4	1.1E-06	4.7E-06
Dichlorobenzene	25321-22-6	1.5E-05	6.7E-05
Formaldehyde	50-00-0	9.5E-04	4.2E-03
Hexane	110-54-3	2.3E-02	0.10
Lead		6.4E-06	2.8E-05
Manganese	7439-96-5	4.8E-06	2.1E-05
Mercury	7439-97-6	3.3E-06	1.4E-05
Naphthalene	91-20-3	7.8E-06	3.4E-05
Nickel	7440-02-0	2.7E-05	1.2E-04
POM		1.1E-06	4.9E-06
Selenium	7782-49-2	3.1E-07	1.3E-06
Toluene	108-88-3	4.3E-05	1.9E-04
Total HAPs		**2.40E-02**	**0.11**

South Building Heating information

Fuel:	Natural Gas	
Total Heat Capacity:	2.29	MMBtu/hr
Heat Value:	1020	MMBtu/MMscf
Operation Limit:	8760	hr/yr

Pollutant	Emission Factor (lb/MMscf)	Uncontrolled Emission Rate (lb/hr)	Maximum Uncontrolled Emissions (tpy)	Pollution Control Efficiency (%)	Maximum Controlled Emissions (lb/hr)	Maximum Controlled Emissions (tpy)
PM	7.6	0.02	7.5E-02	0.0%	0.0171	7.5E-02
PM_{10}	7.6	0.02	7.5E-02	0.0%	0.017	7.5E-02
$PM_{2.5}$	7.6	0.02	7.5E-02	0.0%	0.017	7.5E-02
SO_2	0.6	0.00	5.9E-03	0.0%	0.001	5.9E-03
NO_x	100	0.22	0.98	0.0%	0.225	0.98
CO	84	0.19	0.83	0.0%	0.189	0.83
VOC	5.5	0.01	5.4E-02	0.0%	0.012	0.05
Lead	0.0005	1.12E-06	4.923E-06	0.0%	1.12E-06	4.92E-06

Hazardous Air Pollutant		Emission Factor (lb/MMscf)	Uncontrolled Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emissions (lb/hr)	Maximum Controlled Emissions (tons/yr)
Arsenic	7440-38-2	2.00E-04	4.50E-07	2.0E-06	0.0%	4.5E-07	2.0E-06
Benzene	71-43-2	2.10E-03	4.72E-06	2.1E-05	0.0%	4.7E-06	2.1E-05
Beryllium	7440-41-7	1.20E-05	2.70E-08	1.2E-07	0.0%	2.7E-08	1.2E-07
Cadmium	7440-43-9	1.10E-03	2.47E-06	1.1E-05	0.0%	2.5E-06	1.1E-05
Chromium	7440-47-3	1.40E-03	3.15E-06	1.4E-05	0.0%	3.1E-06	1.4E-05
Cobalt	7440-48-4	8.40E-05	1.89E-07	8.3E-07	0.0%	1.9E-07	8.3E-07
Dichlorobenzene	25321-22-6	1.20E-03	2.70E-06	1.2E-05	0.0%	2.7E-06	1.2E-05
Formaldehyde	50-00-0	7.50E-02	1.69E-04	7.4E-04	0.0%	1.7E-04	7.4E-04
Hexane	110-54-3	1.80	4.05E-03	1.8E-02	0.0%	4.0E-03	1.8E-02
Lead	7439-92-1	5.00E-04	1.12E-06	4.9E-06	0.0%	1.1E-06	4.9E-06
Manganese	7439-96-5	3.80E-04	8.54E-07	3.7E-06	0.0%	8.5E-07	3.7E-06
Mercury	7439-97-6	2.60E-04	5.84E-07	2.6E-06	0.0%	5.8E-07	2.6E-06
Naphthalene	91-20-3	6.10E-04	1.37E-06	6.0E-06	0.0%	1.4E-06	6.0E-06
Nickel	7440-02-0	2.10E-03	4.72E-06	2.1E-05	0.0%	4.7E-06	2.1E-05
POM	00-01-7	8.82E-05	1.98E-07	8.7E-07	0.0%	2.0E-07	8.7E-07
Selenium	7782-49-2	2.40E-05	5.40E-08	2.4E-07	0.0%	5.4E-08	2.4E-07
Toluene	108-88-3	3.40E-03	7.64E-06	3.3E-05	0.0%	7.6E-06	3.3E-05
Total HAPs		---	**4.25E-03**	**1.86E-02**	---	**4.25E-03**	**1.86E-02**

Notes:
Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Pollutant	GWP	Emission Factor (lbs/MMBtu)	Maximum Uncontrolled Emissions (lb/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emission Rate (lbs/hr)	Controlled Emission Rate (tons/yr)
CO_2	1	116.98	268	1,175	0.00	268	1,175
CH_4	25	2.20E-03	5.04E-03	0.0221	0.00	5.04E-03	2.21E-02
N_2O	298	2.20E-04	5.04E-04	0.0022	0.00	5.04E-04	2.21E-03
Total GHG (CO_2e)			268.5	1,176	0.00	268.5	1,176

Notes:
Emission Factors obtained from 40 CFR 98. Converted from kg to lb.

Gas-fired units

Location: South Campus

	# of Units	Manufacturer	Model No	Btu/hr	Total Btu/hr	EQUI Number
RTU 1S, 2S, 3S	3	Sterling	TF250ANS110	250,000	750,000	EQUI208, 209, 210
RTU 4S, 5S	2	Lennox	KGA060S4D	150,000	300,000	EQUI211, 212
RTU 6S	1	Lennox	KGA120S4B	180,000	180,000	EQUI213
RTU 7S	1	Lennox	KGA092S4B	130,000	130,000	EQUI214
RTU 8S, 9S	2	Lennox	KGA04BS4D	65,000	130,000	EQUI215, 216
RTU 10S	1	Proposed	Proposed	228,000	228,000	
MAU 1S	1	Rupp	RID-250-G10	237,000	237000	EQUI217
MAU 2S	1	Greencheck	DG-P115-HO5-VFD	228,000	228000	EQUI218
RTU 11S	1	Proposed	Proposed	110,000	110000	
			IA Total		**2,293,000**	

Total IA Natural Gas (Greenhouse Gases)

Pollutant	Controlled Emission Rate (lbs/hr)	Controlled Emission Rate (tons/yr)
CO_2	1,519	6,653
CH_4	0.0286	1.25E-01
N_2O	0.0029	1.25E-02
Total GHG (CO_2e)	1,520.5	6,660

Water Gremlin Company
Parts Washer: Potential Emission Calculations

Insignificant Activity Minn. R. 7007.1300, subp. 3(F)

Model 34 - Coating Room		
Actual Usage:	30	gallons
Actual Operation	6000	hours
**Note: Usage is adjusted by a factor of 2 for total hours of operation		
Parts Washer - Solution		
Safety-Kleen		
Petroleum Distillates (Hydrotreated Light)	100%	VOC
CAS # 64742-47-8		
Specific Gravity	0.82	
Density	6.7	lb/gal
VOC Content	6.7	lb/gal
Maximum Usage		
Maximum Usage	43.80	gallons/yr
Potential VOC Emissions (Assume all is emitted)	293	lbs
Potential VOC Emissions (Assume all is emitted)	**0.29**	**tons/yr**

Insignificant Activity Minn. R. 7007.1300, subp. 3(F)

Model 34 - North DC Room		
Actual Usage:	30	gallons
Actual Operation	6000	hrs/year
**Note: Usage is adjusted by a factor of 2 for total hours of operation		
Parts Washer - Solution		
Safety-Kleen		
Petroleum Distillates (Hydrotreated Light)	100%	VOC
CAS # 64742-47-8		
Specific Gravity	0.82	
Density	6.7	lb/gal
VOC Content	6.7	lb/gal
Maximum Usage		
Maximum Usage	43.80	gallons/yr
Potential VOC Emissions (Assume all is emitted)	293	lbs
Potential VOC Emissions (Assume all is emitted)	**0.29**	**tons/yr**

Insignificant Activity Minn. R. 7007.1300, subp. 3(F)

Kleer Flo - Billets Room		
Actual Usage:	30	gallons
Actual PDL Operation	6000	hours
**Note: Usage is adjusted by a factor of 2 for total hours of operation		
Parts Washer - Solution		
Safety-Kleen		
Petroleum Distillates (Hydrotreated Light)	100%	VOC
CAS # 64742-47-8		
Specific Gravity	0.82	
Density	6.7	lb/gal
VOC Content	6.7	lb/gal
Maximum Usage		
Maximum Usage	43.80	gallons/yr
Potential VOC Emissions (Assume all is emitted)	293	lbs
Potential VOC Emissions (Assume all is emitted)	**0.29**	**tons/yr**

Insignificant Activity Minn. R. 7007.1300, subp. 3(F)

Small Tub		
Actual Usage:	5	gallons
Actual Operation	6000	hours
**Note: Usage is adjusted by a factor of 2 for total hours of operation		
Parts Washer - Solution		
Safety-Kleen		
Petroleum Distillates (Hydrotreated Light)	100%	VOC
CAS # 64742-47-8		
Specific Gravity	0.82	
Density	6.7	lb/gal
VOC Content	6.7	lb/gal
Maximum Usage		
Maximum Usage	7.30	gallons/yr
Potential VOC Emissions (Assume all is emitted)	49	lbs
Potential VOC Emissions (Assume all is emitted)	**0.05**	**tons/yr**

Water Gremlin Company
Cooling Tower: Potential Emission Calculations **FUGI 1, 2, 4**

Unit Information	
Description:	Cooling Tower
Material	Water
Drift Rate	0.02%
Cycles	1050 gal/min max
Make-up Water TDS	7700 lb solids/10^6 lb water
Hours Uncontrolled	8760
Hours Limited	8760

AP 42 13.4 default

Make-up Water TDS from correspondence 3-13-15.

PM emission factor is based on AP-42 Section 13.4 "Wet Cooling Towers" (Rev 01/95) described procedures for estimating cooling tower water TDS

Emission Rate (lb/hr) = Water Circulation Rate*Drift Rate*TDS
where
TDS = Make-up water TDS in lb solids per 10^6 lb wate

Particulate Matter

Pollutant	Emission Rate (lb/hr)	Uncontrolled Emissions (tpy)	Control Efficiency	Controlled Emissions (tpy)	Limited Emissions (tpy)
TSP	8.09E-01	3.54E+00	0%	3.54E+00	3.54E+00
PM	7.47E-01	3.27E+00	0%	3.27E+00	3.27E+00
PM_{10}	1.55E-01	6.79E-01	0%	6.79E-01	6.79E-01
$PM_{2.5}$	1.13E-03	4.97E-03	0%	4.97E-03	4.97E-03

No Pollutants other than particulate in Cooling Tower emissions. Assume PM10 and PM2.5 emissions speciated according to the New Mexico method belo

C:\Users\jhandtm\AppData\Local\Microsoft\Windows\INetCache\Content.Outlook\XXOR22BI\Water Gremlin Emission Calculations_20220701_Rev_MPCA[Cooling Tower]

Water Gremlin Company
Chemical Usage: Potential Emission Calculations
Distiller - Detrex FC30-EW
EQUI174, STRU59

Typical Operation:	8,760 hrs/yr
Potential Operation:	8,760 hrs/yr

Chemical Information

MSDS Trade Name	T-DCE
Air Displaced (cfm)	0.245
MW of T-DCE	96.9
Percent by Weight	
VOC Content	100.00%
T-DCE	100.00%
Total HAPs	0.00%

Note: Exhaust concentration of TCE is from client on 10/9/2018.
Calculation based on TCE test results assuming a 100% safety factor to determine T-DCE emissions.

Emission rate is calculated from EPA Method 2

Emission Rate (lb/hr) = C_{gas} x MW x flow rate x Constant
where
C_{gas} = Concentration of gas Constant = 1.57E-07
MW = Molecular weight

Pollutant	Uncontrolled Emission Rate (lbs/hr)	Maximum Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)	Controlled Emissions (lb/hr)	Maximum Controlled Emissions (tons/yr)
T-DCE	2.33E-01	1.02E+00	0.0%	2.33E-01	1.02E+00

Water Gremlin

Paved Haul Roads

Paved Haul Road Equation 1 (AP-42 Section 13.2.1 - 01/11)

$$E = k * (sL)^{0.91} * (W)^{1.02}$$

where:

E = Emission factor (lb/VMT, vehicle miles traveled)

k = Particle size multiplier (lb/VMT) from AP-42, Table 13.2.1-1, k=0.011 PM, k= 0.0022 PM_{10}, k= 0.00054 $PM_{2.5}$.

sL = Road surface material silt loading content (g/m2) *Assumption* **1.1** g/m2 AP-42, Table 13.2.1-3 for Corn Wet Mills [1]

W = Mean vehicle weight based on the "fleet" average weight of all vehicles traveling the road.

PAVED ROADS

Segment Type	Segment Distance (mi.)	Number of Trips/Day	Miles Per Day	Wt. Avg. Vehicle (tons)	Ave sL Content (g/m2)	Vehicle Emission Factor (lb/VMT)			Uncontrolled Emissions (lb/hr)			Uncontrolled Emissions (ton/yr)			Dust Control Strategy		Controlled Emissions (lb/hr)			Controlled Emissions (ton/yr)		
						PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	Control Method	Control Efficiency (%)	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
South Building - Segment 1	0.10	14	1.4	19.2	1.1	0.24	0.05	0.01	0.01	2.8542E-03	7.0057E-04	6.2506E-02	1.2501E-02	3.0685E-03	NA	0.0	1.4271E-02	2.8542E-03	7.0057E-04	6.2506E-02	1.2501E-02	3.0685E-03
South Building - Segment 2	0.02	28	0.4	27.3	1.1	0.35	0.07	0.02	0.01	1.2659E-03	3.1072E-04	2.7723E-02	5.5447E-03	1.3610E-03	NA	0.0	6.3295E-03	1.2659E-03	3.1072E-04	2.7723E-02	5.5447E-03	1.3610E-03
South Building - Segment 3	0.02	28	0.4	27.3	1.1	0.35	0.07	0.02	0.01	1.2659E-03	3.1072E-04	2.7723E-02	5.5447E-03	1.3610E-03	NA	0.0	6.3295E-03	1.2659E-03	3.1072E-04	2.7723E-02	5.5447E-03	1.3610E-03
South Building - Segment 4	0.03	14	0.4	27.3	1.1	0.35	0.07	0.02	0.01	1.2224E-03	3.0004E-04	2.6770E-02	5.3540E-03	1.3142E-03	NA	0.0	6.1118E-03	1.2224E-03	3.0004E-04	2.6770E-02	5.3540E-03	1.3142E-03
South Building - Segment 5	0.15	14	2.1	35.3	1.1	0.45	0.09	0.02	0.04	7.9552E-03	1.9526E-03	1.7422E-01	3.4844E-02	8.5525E-03	NA	0.0	3.9776E-02	7.9552E-03	1.9526E-03	1.7422E-01	3.4844E-02	8.5525E-03
North Building #1	0.05	58	3.2	27.5	1.1	0.35	0.07	0.02	0.05	9.3167E-03	2.2868E-03	2.0403E-01	4.0807E-02	1.0016E-02	NA	0.0	4.6583E-02	9.3167E-03	2.2868E-03	2.0403E-01	4.0807E-02	1.0016E-02
North Building #2	0.08	22	1.8	20.1	1.1	0.26	0.05	0.01	0.02	3.8573E-03	9.4680E-04	8.4476E-02	1.6895E-02	4.1470E-03	NA	0.0	1.9287E-02	3.8573E-03	9.4680E-04	8.4476E-02	1.6895E-02	4.1470E-03
									(lb/hr)			(ton/yr)						(lb/hr)			(ton/yr)	
									PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$			PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
									0.14	0.03	0.01	0.61	0.12	0.03			0.14	0.03	0.01	0.61	0.12	0.03

Notes:

1. The Corn Wet Mills value is the only type of industry listed that does not typically have outdoor fugitive material handling and outdoor storage piles. Therefore, the Corn Wet Mill value is the most representive data for Water Gremlin of the EPA industrial source values.

Water Gremlin
Vehicle Traffic Information

North Building					
Traffic Calculated by Activity				**Number of Times Road Segments Traveled per Day**	
Activity	**Empty Weight (pounds)**	**Full Weight (pounds)**	**Max Vehicles per day**	**NBLDG1**	**NBLDG2**
Raw Material Trucks	30,000	80,000	7.00	14	0
Lead Truck	30,000	80,000	7.00	14	0
Finish Product Trucks (WG Truck	30,000	80,000	15.0	30	0
Chemical Deliveries	30,000	80,000	0.00	0	0
Pallet Trucks	48,000	60,000	5.00	0	10
Box Trucks	20,000	30,000	5.00	0	10
Garbage Truck	33,000	48,000	1.00	0	2
TOTALS				58	22

Fleet Loaded Status by Activity and Road Segment				**Percent of Trips Loaded**	
Activity	**Empty Weight (tons)**	**Full Weight (tons)**	**Payload Weight (tons)**	**NBLDG1**	**NBLDG2**
Raw Material Trucks	15.00	40.00	25.00	50%	0%
Lead Truck	15.00	40.00	25.00	50%	0%
Finish Product Trucks (WG Truck	15.00	40.00	25.00	50%	0%
Chemical Deliveries	15.00	40.00	25.00	0%	0%
Pallet Trucks	24.00	30.00	6.00	0%	50%
Box Trucks	10.00	15.00	5.00	0%	50%
Garbage Truck	16.50	24.00	7.50	0%	100%

South Building								
Traffic Calculated by Activity				**Number of Times Road Segments Traveled per Day**				
Activity	**Empty Weight (pounds)**	**Full Weight (pounds)**	**Max Vehicles per day**	**SBLDG_1 (one pass)**	**SBLDG_2 (two passes)**	**SBLDG_3 (two passes)**	**SBLDG_4 (one pass)**	**SBLDG_5 (one pass)**
Raw Material Trucks	30,000	80,000	1	1.0	2.0	2.0	1.0	1.0
Lead Truck	30,000	80,000	0	0.0	0.0	0.0	0.0	0.0
Finish Product Trucks (WG Truck	30,000	80,000	11	11.0	22.0	22.0	11.0	11.0
Chemical Deliveries	30,000	80,000	1	1.0	2.0	2.0	1.0	1.0
Pallet Trucks	48,000	60,000	0	0.0	0.0	0.0	0.0	0.0
Box Trucks	20,000	30,000	0	0.0	0.0	0.0	0.0	0.0
Garbage Truck	33,000	48,000	1	1.0	2.0	2.0	1.0	1.0
TOTALS				14.0	28.0	28.0	14.0	14.0

Fleet Loaded Status by Activity and Road Segment				**Percent of Trips Loaded**				
Activity	**Empty Weight (tons)**	**Full Weight (tons)**	**Payload Weight (tons)**	**SBLDG_1 (one pass)**	**SBLDG_2 (two passes)**	**SBLDG_3 (two passes)**	**SBLDG_4 (one pass)**	**SBLDG_5 (one pass)**
Raw Material Trucks	15.00	40.00	25.00	100%	50%	50%	50%	0%
Lead Truck	15.00	40.00	25.00	0%	0%	0%	0%	0%
Finish Product Trucks (WG Truck	15.00	40.00	25.00	0%	50%	50%	50%	100%
Chemical Deliveries	15.00	40.00	25.00	100%	50%	50%	50%	0%
Pallet Trucks	24.00	30.00	6.00	0%	0%	0%	0%	0%
Box Trucks	10.00	15.00	5.00	0%	0%	0%	0%	0%
Garbage Truck	16.50	24.00	7.50	100%	100%	100%	100%	100%

Water Gremlin
Vehicle Traffic Information

Fleet Average Weight Calculated by Road Segment				Fleet Weight	
Activity	Empty Weight (tons)	Full Weight (tons)	Payload Weight (tons)	NBLDG1	NBLDG2
Raw Material Trucks	15.00	40.00	25.00	27.5	15.0
Lead Truck	15.00	40.00	25.00	27.5	15.0
Finish Product Trucks (WG Truck	15.00	40.00	25.00	27.5	15.0
Chemical Deliveries	15.00	40.00	25.00	15.0	15.0
Pallet Trucks	24.00	30.00	6.00	24.0	27.0
Box Trucks	10.00	15.00	5.00	10.0	12.5
Garbage Truck	16.50	24.00	7.50	16.5	24.0
Fleet Average Weight (tons)				**27.50**	**20.14**

Fleet Average Height Calculated by Road Segment			Fleet Height	
Activity	Empty Height (feet)	Full Height (feet)	NBLDG1	NBLDG2
Raw Material Trucks	10.00	10.00	10.00	10.00
Lead Truck	10.00	10.00	10.00	10.00
Finish Product Trucks (WG Truck	10.00	10.00	10.00	10.00
Chemical Deliveries	12.00	12.00	12.00	12.00
Pallet Trucks	10.00	10.00	10.00	10.00
Box Trucks	10.00	10.00	10.00	10.00
Garbage Truck	10.00	10.00	10.00	10.00
Fleet Average Height (ft)			**10.00**	**10.00**

Fleet Average Weight Calculated by Road Segment				Fleet Weight				
Activity	Empty Weight (tons)	Full Weight (tons)	Payload Weight (tons)	SBLDG_1 (one pass)	SBLDG_2 (two passes)	SBLDG_3 (two passes)	SBLDG_4 (one pass)	SBLDG_5 (one pass)
Raw Material Trucks	15.00	40.00	25.00	40.0	27.5	27.5	27.5	15.0
Lead Truck	15.00	40.00	25.00	15.0	15.0	15.0	15.0	15.0
Finish Product Trucks (WG Truck	15.00	40.00	25.00	15.0	27.5	27.5	27.5	40.0
Chemical Deliveries	15.00	40.00	25.00	40.0	27.5	27.5	27.5	15.0
Pallet Trucks	24.00	30.00	6.00	24.0	24.0	24.0	24.0	24.0
Box Trucks	10.00	15.00	5.00	10.0	10.0	10.0	10.0	10.0
Garbage Truck	16.50	24.00	7.50	24.0	24.0	24.0	24.0	24.0
Fleet Average Weight (tons)				**19.21**	**27.25**	**27.25**	**27.25**	**35.29**

Fleet Average Height Calculated by Road Segment			Fleet Height				
Activity	Empty Height (feet)	Full Height (feet)	SBLDG_1 (one pass)	SBLDG_2 (two passes)	SBLDG_3 (two passes)	SBLDG_4 (one pass)	SBLDG_5 (one pass)
Raw Material Trucks	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Lead Truck	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Finish Product Trucks (WG Truck	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Chemical Deliveries	12.00	12.00	12.00	12.00	12.00	12.00	12.00
Pallet Trucks	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Box Trucks	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Garbage Truck	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Fleet Average Height (ft)			**10.14**	**10.14**	**10.14**	**10.14**	**10.14**

Water Gremlin Company

Process Equipment Rule Emission Limit Calculations

Table K: Instructions for determining your particulate limit

Minnesota has a State rule for the concentration of particulate matter that may be in your exhaust stream. The unit of the standard is grains per dry standard cubic foot. You need to convert your actual exhaust flow to dry standard cubic feet per minute to find the emission limit from the rule.

Sources subject to this rule are required to meet the emission limits established at all times. These limits will vary depending on operating conditions. To determine compliance at any point in time (i.e. for a stack test), follow the steps below:

1) Determine the amount of dry material (subtract any water or moisture content) in pounds per hour that is processed by your equipment.

2) Use Table K.1 to determine your allowed emission rate based on process weight rate. If your process weight rate falls between two values on the table, interpolate or extrapolate using the equation:

$E = 3.59 \times \left(\frac{P}{2000}\right)^{0.62}$ P < 60,000 lbs/hour; and:

$E = 17.31 \times \left(\frac{P}{2000}\right)^{0.16}$ P > 60,000 lbs/hour

where: E = emission rate in lbs/hour; and
P = process weight rate in lbs/hour

3) If your process equipment is vented to the atmosphere, determine the airflow through your stack. Correct to 68 F and 14.7 psi, and correct to remove any moisture in the gas stream to obtain the air flow in dry standard cubic feet per minute (dscfm).

4) Use Table K.2 to determine your allowed concentration in grains per dry standard cubic foot (gr/dscf). Interpolate using the equation:

$c = 1.7627 \times V^{-0.3241}$ where: c = concentration in gr/dscf,
V = gas volume in dscfm

5) Determine which of the two emission rates calculated above is *less stringent* . To convert a concentration (calculated in step 4) to an emission rate (calculated in step 2), use the following equation:

$E = c \times V \times \frac{60}{7000}$

where: E = emission rate in lbs/hour;
c = concentration in gr/dscf;
V = gas volume in dscfm

Table K.1

Process Rate (lbs/hour)	Emission Rate (lbs/hour)
100	0.55
500	1.53
1000	2.25
5000	6.34
10000	9.73
20000	14.99
60000	29.6
80000	31.19
120000	33.28
160000	34.85
200000	36.11
400000	40.35
1000000	46.72

Table K.1

Source Gas Volume (dscfm)	Concentration (gr/dscf)
7,000 or less	0.1
8,000	0.096
9,000	0.092
10,000	0.089
20,000	0.071
30,000	0.062
40,000	0.057
50,000	0.053
60,000	0.05
80,000	0.045
100,000	0.042
120,000	0.04
140,000	0.038
160,000	0.036
180,000	0.035
200,000	0.034
300,000	0.03
400,000	0.027
500,000	0.025
600,000	0.024
800,000	0.021
1,000,000 or more	0.02

Note: Regardless of the allowable emission rates calculated from Tables K.1 and K.2, no process equipment is allowed to emit more than 0.30 grains per standard cubic foot of exhaust gas.

Units Subject to Rule:

		Allowable by Process Weight			Allowable by Air Flow					
EQUI	SV#	Process Rate (lb/hr)	Emission Rate (lb/hr)	Emission Rate (gr/dscf)	Airflow (acfm)	Airflow [1] (dcfm)	Emission Rate (gr/dscfm)	Emission Rate (lb/hr)	EQUI PTE for PM (lb/hr)	Does facility meet IPER?
EQUI82	STRU73	0.82	0.03	0.00	15,000	15,000	0.078	10.04	2.47E-03	Yes
EQUI88	STRU73	4.73	0.08	0.00	15,000	15,000	0.078	10.04	2.47E-05	Yes
EQUI95	STRU73	2.36	0.05	0.00	15,000	15,000	0.078	10.04	1.99E-03	Yes
EQUI113	STRU57	313.91	1.14	2.66	50	50	0.496	0.21	6.28E-04	Yes
EQUI114	STRU57	231.13	0.94	2.20	50	50	0.496	0.21	4.62E-04	Yes
EQUI115	STRU50, STRU43	210.49	0.89	0.01	15,000	15,000	0.078	10.04	2.10E-04	Yes
EQUI117	STRU73	4.95	0.09	0.00	15,000	15,000	0.078	10.04	1.49E-02	Yes
EQUI121	STRU15	2,537.50	4.16	0.11	4,505	4,505	0.115	4.45	1.01E-02	Yes
EQUI122	STRU15	2,922.50	4.54	0.12	4,505	4,505	0.115	4.45	3.02E-02	Yes
EQUI123	STRU15	3,340.00	4.93	0.13	4,505	4,505	0.115	4.45	1.39E-02	Yes
EQUI124	STRU16	3,355.00	4.95	0.13	4,505	4,505	0.115	4.45	1.73E-02	Yes
EQUI125	STRU16	4,531.25	5.96	0.15	4,505	4,505	0.115	4.45	8.09E-03	Yes
EQUI126	STRU16	2,900.00	4.52	0.12	4,505	4,505	0.115	4.45	1.84E-02	Yes
EQUI127	STRU17	2,537.50	4.16	0.13	3,756	3,756	0.122	3.94	4.48E-03	Yes
EQUI128	STRU17	2,537.50	4.16	0.13	3,756	3,756	0.122	3.94	1.38E-02	Yes
EQUI129	STRU17	2,537.50	4.16	0.13	3,756	3,756	0.122	3.94	7.64E-03	Yes
EQUI130	STRU74	1,277.50	2.72	0.08	3,756	3,756	0.122	3.94	7.07E-03	Yes
EQUI131	STRU74	7,453.13	8.12	0.25	3,756	3,756	0.122	3.94	2.19E-02	Yes
EQUI132	STRU20	5,010.00	6.34	0.20	3,756	3,756	0.122	3.94	1.91E-02	Yes
EQUI133	STRU20	4,350.00	5.81	0.18	3,756	3,756	0.122	3.94	1.37E-02	Yes
EQUI134	STRU75	4,642.50	6.05	0.19	3,756	3,756	0.122	3.94	1.57E-02	Yes
EQUI135	STRU75	12,750.00	11.32	0.35	3,756	3,756	0.122	3.94	3.09E-02	Yes
EQUI136	STRU23	6,359.38	7.35	0.23	3,756	3,756	0.122	3.94	3.09E-02	Yes
EQUI137	STRU24	3,697.50	5.25	0.16	3,756	3,756	0.122	3.94	1.14E-02	Yes
EQUI138	STRU24	4,785.00	6.17	0.19	3,756	3,756	0.122	3.94	1.92E-02	Yes
EQUI139	STRU25	5,437.50	6.67	0.21	3,756	3,756	0.122	3.94	2.06E-02	Yes
EQUI140	STRU25	3,662.50	5.22	0.16	3,756	3,756	0.122	3.94	1.61E-02	Yes
EQUI141	STRU26	4,785.00	6.17	0.19	3,756	3,756	0.122	3.94	2.56E-02	Yes
EQUI142	STRU26	5,218.75	6.51	0.20	3,756	3,756	0.122	3.94	1.92E-02	Yes
EQUI143	STRU26	4,702.50	6.10	0.19	3,756	3,756	0.122	3.94	1.60E-02	Yes
EQUI146	STRU30	12,750.00	11.32	0.35	3,756	3,756	0.122	3.94	4.15E-02	Yes
EQUI147	STRU31	6,359.38	7.35	0.23	3,756	3,756	0.122	3.94	4.15E-02	Yes
EQUI149	STRU32	3,355.00	4.95	0.15	3,756	3,756	0.122	3.94	2.06E-02	Yes
EQUI150	STRU32	5,596.25	6.79	0.21	3,756	3,756	0.122	3.94	2.12E-02	Yes
EQUI152	STRU33	7,453.13	8.12	0.25	3,756	3,756	0.122	3.94	4.52E-02	Yes
EQUI153	STRU34	4,578.75	6.00	0.19	3,756	3,756	0.122	3.94	4.08E-02	Yes
EQUI154	STRU34	11,296.88	10.50	0.33	3,756	3,756	0.122	3.94	3.92E-02	Yes
EQUI155	STRU26	4,785.00	6.17	0.19	3,756	3,756	0.122	3.94	1.60E-02	Yes
EQUI156	STRU33	5,596.25	6.79	0.21	3,756	3,756	0.122	3.94	2.96E-02	Yes
EQUI157	STRU16	9,941.25	9.70	0.25	4,505	4,505	0.115	4.45	4.52E-02	Yes
EQUI158	STRU30	5,596.25	6.79	0.21	3,756	3,756	0.122	3.94	4.27E-02	Yes
EQUI160	STRU35	4,060.00	5.57	0.32	2,004	2,004	0.150	2.58	2.25E-03	Yes
EQUI221	STRU1	2,500.00	4.12	0.11	4,505	4,505	0.115	4.45	2.52E-02	Yes
EQUI223	STRU71	55.00	0.39	0.02	2,400	2,400	0.141	2.91	3.18E-03	Yes
EQUI224	STRU71	40.00	0.32	0.02	2,400	2,400	0.141	2.91	0.00E+00	Yes
EQUI225	STRU71	46.00	0.35	0.02	2,400	2,400	0.141	2.91	0.00E+00	Yes
EQUI226	STRU71	17.00	0.19	0.01	2,400	2,400	0.141	2.91	0.00E+00	Yes
EQUI227	STRU71	48.00	0.36	0.02	2,400	2,400	0.141	2.91	0.00E+00	Yes
EQUI228	STRU71	62.00	0.42	0.02	2,400	2,400	0.141	2.91	3.58E-03	Yes
EQUI229	STRU71	52.00	0.37	0.02	2,400	2,400	0.141	2.91	3.00E-03	Yes
EQUI230	STRU71	79.00	0.48	0.02	2,400	2,400	0.141	2.91	4.56E-03	Yes
EQUI231	STRU71	194.00	0.85	0.04	2,400	2,400	0.141	2.91	1.12E-02	Yes
EQUI232	STRU71	138.00	0.68	0.03	2,400	2,400	0.141	2.91	7.97E-03	Yes
EQUI240	STRU72	1.32	0.04	0.00	2,000	2,000	0.150	2.57	6.34E-03	Yes

[1] Assumes acfm is equal to dscfm.

[2] Includes condensible particulate

Building vents are not directly vented to a specific process. Therefore there is not an applicable process rate to determine the allowable based on throughput.

Modeling Paved Road Parameters

Gilles et. al. [Atmos. Environ. (2005), P. 2341-2347] suggest the following for roads:

TOP	1.7 * Vehicle Height
Release Height	= TOP / 2.0
Init. Vert. Dim.	= TOP / 2.15
Init. Lat. Dim.	= Spacing / 2.15

Spacing = 10 m for roads with 1 lane each way
Spacing = 20 m for roads with 2 lane each way
Spacing = 25 m for roads with 3 lane each way

North Building		
Parameters	Traffic	
	ft	m
Truck Height	10.00	3.05
TOP	17.00	5.18
Release Height	8.50	2.59
Init. Vert. Dim.	7.91	2.41
Init. Lat. Dim.	15.26	4.65
Spacing	32.81	10.00

South Building		
Parameters	Truck Traffic	
	ft	m
Truck Height	10.14	3.09
TOP	17.24	5.26
Release Height	8.62	2.63
Init. Vert. Dim.	8.02	2.44
Init. Lat. Dim.	15.26	4.65
Spacing	32.81	10.00

Total Segment Lengths			
Location	mile	ft	m
South Building - Segment 1	0.10	528.22	161
South Bullding - Segment 2	0.02	82.02	25
South Building - Segment 3	0.02	82.02	25
South Bullding - Segment 4	0.03	157.48	48
South Bullding - Segment 5	0.15	790.68	241
North Building #1	0.05	288.71	88
North Building #2	0.08	433.07	132

EQUI44-EQUI46

Fans 1-3

Upblast Stack	Diameter (ft)	Radius (ft)	Area (ft^2)
Outer Ring	6.16666667	3.083333333	29.8669216
Inner Cap	5	2.5	19.6349375
Difference			10.2319841

	Area (ft^2)	Radius (ft)	diameter (ft)	Diameter (m)
Effective Diameter	10.2319841	1.804700652	3.6094	1.1001

Fans 4-14

Upblast Stack	Diameter (ft)	Radius (ft)	Area (ft^2)
Outer Ring	4.88541667	2.442708333	18.7453146
Inner Cap	3.71875	1.859375	10.8613418
Difference			7.88397282

	Area (ft^2)	Radius (ft)	diameter (ft)	Diameter (m)
Effective Diameter	7.88397282	1.584155488	3.1683	0.9657

STRU72

Upblast Stack	Diameter (ft)	Radius (ft)	Area (ft^2)
Outer Ring	2.04166667	1.020833333	3.27385312
Inner Cap	1.83333333	0.916666667	2.63980826
Difference			0.63404486

	Area (ft^2)	Radius (ft)	diameter (ft)	Diameter (m)
Effective Diameter	0.63404486	0.449247055	0.8985	0.2739

(@i Stantec

Commented [A72]: This memorandum is a jpeg in the AQDM02 and appears to have shifted over when the AQDM02 was pdf'd. Stantec requests that the memorandum provided to MPCA replace this one.

To:	Mr. David Brown MPCA	From:	Jared Anderson, Stantec Consulti
File:	227701330	Date:	July 14, 2022

Reference: Method for the Annual Leod RASS Modeling Analysis

Introduction

This memorandum describes the methodology employed for modeling annual lead RASS im Gremlin.

Overview

Stantec Consulting Services Inc. (Stantec) develoDed a modeling strategy to demonstrate cc the Risk Assessment Screening Spreadsheet (RASS), specifically for exposure to lead emis! gardener, that demonstrates protection of human health and the environment and allows Wa operate their die cast (DC) processes as needed. A facility-wide annual throughput limit of 71 of lead for the entirety of the DC process, without any limit for a specific DC machine, meets benchmark for inhalation and non-inhalation exposure. Each DC machine does have a daily other modeling analyses. Stantec conducted modeling exercises that show compliance with benchmark at this annual throughput level regardless of which DC machine is used and whic fan emits the uncontrolled DC emissions. The explanation of the modeling method is present

The modeling evaluation for lead was unique for several reasons. The facility needs operatio operate the specific DC machines corresponding to customer orders and cannot necessarily machines will be heavily utilized over the life of the forthcoming air permit. The sum of the da limits for each DC equates to over 160,000,000 160 million) Dounds of lead throughput per \ much higher than the facility has used in the past 12 years. However, assigning annual lead to each DC would unnecessarily constrain operations beyond what is practicable. Therefore, utilization rate of the total facility DC capacity is appropriate to meet both public health conce needs. The modeling shows that the facility—wide limit would be protective. Modeling looked scenario where all captured lead emissions from DC operations exit the facility at one smog uncaptured lead emissions from DC operations exit the facility at one fan, creating the highe! impact at a receptor. The method used to make this determination is described below.

Emission Calculations

The emission calculations workbook and AQDM-02 detail the diecasting throughputs as well matter (PM) and lead emissions from the DC machines. Emission factors were derived from

on DC machines where lead emissions were tested at the inlet to the SH and the outlet. Whig install Nederman control devices in series ahead of the SH for each DC, the SH-only stack t‹ factors are used for conservatism. The pollution control train is assumed to capture 95% oT E

while 5% of DC emissions exit the facility uncontrolled. Total annual lead emissions from the are calculated as follows:

Smog Hog Lead Emissions = Lead Throughput * lead emission factor from the outlet

48.25 lb lead emissions/year = 78,711,000 lb lead throughput/year * 6.13e-7 lb lead emission throughput. This equates to an average of 5.5e-3 lb lead/hour.

Exhaust Fan Lead Emissions = (Lead Throughput "lead emission factor from the inlet)/(95% efficiency) " (1-0.95)

8.45 lb lead emissions/year = 78,711,000 lb lead throughput/year * 2.04e-6 Ib lead emissions throughput / 0.95 * 0.05. This equates to an average of 9.6e-4 Ib lead/hour.

Model Setup

The modeling method evaluated all combinations of DC captured lead emissions and all unc emissions, along with lead emissions from the rest of the plant. With this method, Stantec ev smog hog (SH) individually with all 5.5e-3 lb/hr of captured lead emissions exiting out its res((STRU) and all 9.6E-4 lb/hr of uncaptured DC lead emissions rotating between each fan, whi plant lead emissions remain unchanged. The analysis for the SH emissions and rotating fan accomplished with source groups in AERMOD. For example, all captured SH emissions (5.5› emitted from STRU15 (SH#1), all uncontrolled DC lead emissions (9.6e-4 lb/hr) are applied t (STRU43 through STRU53 and STRU56), while concurrently assuming and the rest of the pt normal, resulting in 12 different source groups. The setup for these 12 source groups for STF presented in Table 1, and the uncontrolled DC fan emissions are highlighted in each group I(that each source group is independent, and annual impacts from each source group over eai years represents impacts as if the plant operated in this manner for the entire year.

The organization of this modeling method was established by SH STRU number, with the sa
group methodology set for all 15 SH STRUs for each of the five meteorological years. This r‹
different sets of AER MOD input/output files. Over the entire analysis, this method provides a
concentrations for each SH STRU/uncaptured dc fan/model year, resulting in 900 individual ‹
concentrations. The resultant matrix is included with the modeling files that summarizes all c‹
obtained with this method. Each of these 15 SH STRU run sets contain the captured DC emi
lb/hr) for every SH, _II uncontrolled DC emissions (9.6E-4 lb/hr) for the fans, and the remains
lead emissions. The output controlled by source grouping ignores the 14 SH STRUs not con!
model run. This results in a warning message in the AERMOD output that 14 STRUs were rr
included in any source groups, which is the desired effect.

Table 1 Example AERMOD Source Group for the SH/Fan Analysis

Source Group Name	Smog Hog STRU	Fan STRU with uncontrolled DC emissions	Sources Included
STR15_53	STRU15	STRU53	STRU73 STRU1 STRU68 STR U69 STRU15 STRU35 STRUS? STRU53 STRUS 3dc STRU52 STRU51 STRU56 STRU60 STR STRU45 STRU46 STRU47 STRU48 STR U49 STR U50 STRU4 STRU57 CT1 CT2 CT3 STRU70 STRU71 STRU72 SBLDGIA I
STR15_52	STRU15	STRU52	STRU73 STRU1 STRU68 STR U69 STRU15 STRU35 STRUS? STRU53 STRU52 STRU52dc STRU51 STRU56 STRU60 STR STRU45 STRU46 STRU47 STRU48 STR U49 STR U50 STRU4 STRU57 CT1 CT2 CT3 STRU70 STRU71 STRU72 SBLDGIA I
STR15_51	STRU15	STRU51	STRU73 STRU1 STRU68 STR U69 STRU15 STRU35 STRUS? STRU53 STRU52 STRU51 STRU51 dc STRU56 STRU60 STR STRU45 STRU46 STRU47 STRU48 STR U49 STR U50 STRU4 STRU57 CT1 CT2 CT3 STRU70 STRU71 STRU72 SBLDGIA I
STR15_56	STRU15	STRU51	STRU73 STRU1 STRU68 STRU69 STRU15 STRU35 STARU5

			STRU53 STRU52 STRU51 STRU56 STRU56dc STRU60 STR STRU45 STRU46 STRU47 STRU48 STRU49 STRU50 STRU4 STRU57 CT1 CT2 CT3 STRU70 STRU71 STRU72 SBLDGIA I
STR15_44	STRU15	STRU44	STRU73 STRU1 STRU68 STRU69 STRU15 STRU35 STRUS? STRU53 STRU52 STRU51 STRU56 STRU60 STRU44 STRU4 STRU45 STRU46 STRU47 STRU48 STRU49 STRU50 STRU4 STRU57 CT1 CT2 CT3 STRU70 STRU71 STRU72 SBLDGIA I
IUTR15_45	STRU15	STRU45	STRU73 t TRU1 STRU68 STRU69 STRU15 t TRU35 STRUS? STRU53 STRU52 STRU51 STRU56 STRU60 STRU44 STRU4 STRU45dc STRU46 STRU47 STRU48 STRU49 STRU50 STR STRU57 CT1 CT2 CT3 STRU70 STRU71 STRU72 SBLDGIA I
STR15_46	STRU15	STRU46	STRU73 STRU1 STRU68 STRU69 STRU15 STRU35 STRUS? STRU53 STRU52 STRU51 STRU56 STRU60 STRU44 STRU4 STRU46 STRU46dc STRU47 STRU48 STRU49 STRU50 STR STRU57 CT1 CT2 CT3 STRU70 STRU71 STRU72 SBLDGIA I
STR15_47	STRU15	STRU47	STRU73 STRU1 STRU68 STRU69 STRU15 STRU35 STRUS? STRU53 STRU52 STRU51 STRU56 STRU60 STRU44 STRU4 STRU46 STRU47 STRU47dc STRU48 STRU49 STRU50 STR STRU57 CT1 CT2 CT3 STRU70 STRU71 STRU72 SBLDGIA I
STR15_48	STRU15	STRU48	STRU73 STRU1 STRU68 STRU69 STRU15 STRU35 STRUS? STRU53 STRU52 STRU51 STRU56 STRU60 STRU44 STRU4 STRU46 STRU47 STRU48 STRU48dc STRU49 STRU50 STR STRU57 CT1 CT2 CT3 STRU70 STRU71 STRU72 SBLDGIA I
STR15_49	STRU15	STRU49	STRU73 STRU1 STRU68 STRU69 STRU15 STRU35 STRUS? STRU53 STRU52 STRU51 STRU56 STRU60 STRU44 STRU4 STRU46 STRU47 STRU48 STRU49 STRU49dc STRU50 STR STRU57 CT1 CT2 CT3 STRU70 STRU71 STRU72 SBLDGIA I
STR15_50	STRU15	STRU50	STRU73 STRU1 STRU68 STR U69 STRU15 STRU35 STRUS? STRU53 STRU52 STRU51 STRU56 STR U60 STR U44 STRU4 STRU46 STRU47 STRU48 STRU49 STR U50 STRU50dc STR STRU57 CT1 CT2 CT3 STRU70 STRU71 STRU72 SBLDGIA I
STR15_43	STRU15	STRU43	STRU73 STRU1 STRU68 STR U69 STRU15 STRU35 STRUS? STRU53 STRU52 STRU51 STRU56 STR U60 STR U44 STRU4 STRU46 STRU47 STRU48 STRU49 STR U50 STR U43 STRU4 STRU57 CT1 CT2 CT3 STRU70 STRU71 STRU72 SBLDGIA I

Reference: Method for the Annual Lead RASS Modeling Analysis

Bodel Receptor 6rid

The receptor grid employed for this analysis (see Figure 1) was separate and distinct from th for the evaluating m odeled compliance with the *NAAOS.* The NAAQS grid is the ambient air property boundary, and represents where a receptor could have access near the facility. Bas MPCA on May 5, 2022, the receptor grid for this annual lead risk assessment follows the Wa property line (not fence line / controlled access), the western edge of Otter Lake Road and th of Whitaker Street. This analysis is for evaluation of the urban gardener and resident exposu receptors indicate the edge of where a garden would be possible based on current or future j use.

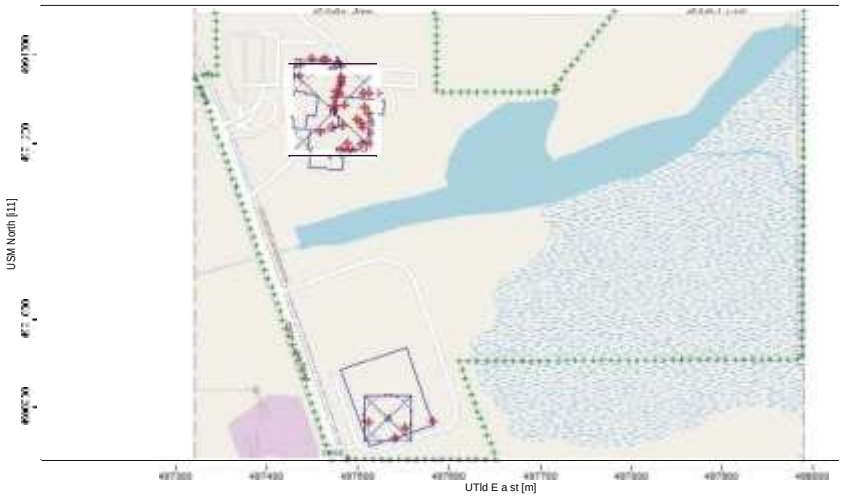


Figure 1 Receptor Grid for Annual Lead RASS

Reference: Method for the Annual Lead RASS Modeling Analysis

Model Results

The maximum concentration for each SH STRU/uncaptured dc across all five years was calc
matrix of 180 values. The maximum of this value represents the worst-case SH STRU/uncap
combination. This combination is STRU23 with fan STRU52 at a concentration of 0.02938 p
modeling method shows that an annual facility limit of 78,711,000 pounds of lead throughput
the DC operations, results in a maximum concentration which meets the noncarcinogenic he
for an urban gardener as represented in MPCA's RASS. The method with the multiple combi
lead emissions assigned to individual smog hogs and roof exhaust fans also shows that indi
machines limitations are unnecessary.

sk:\lus9288-ppfss01\shared_projects\227701330\technical\air dispersion modeling\aermod\tr56\rass_annleadsuite\annualleadrass_modelinganalysisjuly2022_revised.docx

Memo

Kendall Necker
ng Services Inc

pacts forWater

›mpliance with
sions by an urban
iter Gremlin to
3,711,000 pounds
the lead health
limit addressed in
the lead health
:h roof exhaust
fed below.

Anal flexibility to
predict which DC
iily throughput
¿ear, which is
throughput limits
a lower annual
lms and facility
at the worst—case
hog and all
st combined

as the particulate
past stack tests

Ie the facility will
°st emission
JC emissions,

die cast process

ns/lb lead

› capture

s/lb lead

aptured lead fan
aluated each
oective stack
ile the rest of the
emissions was
e-3 lb/hr) are
:o each fan
tant emits as
7U15 are
or clarity. Note
ch of the five

me 12 source
=sults in 15
nnual
annual
oncentrations
issions (5.5e-3
Jer of the plant
sidered for that
Modeled but not

!U44
f3 STRU67
NBLDGIA

!U44
f3 STRU67
NBLDGIA

!U44
f3 STRU67
NBLDGIA

!U44
f3 STRU67
NBLDGIA

f4dc
f3 STRU67
NBLDGIA

f5
!U43 STRU67
NBLDGIA

f5
!U43 STRU67
NBLDGIA

f5
!U43 STRU67
NBLDGIA

f5
!U43 STRU67
NBLDGIA

f5
'U43 STRU67
NBLDGIA

f5
!U43 STRU67
NBLDGIA

f5
f3dc STRU67
NBLDGIA

ie grid employed
boundary, not the
›ed on input from
iter Grem lin
e northern edge
+e scenarios. The
potential land

:ulated for a final
)tured dc fan
g/m ^{3}. This
: for COMG 1 2,
alth benchmark
inations of all
vidual annual DC

Attachment 1a – MPCA corrected RASS

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

RASS spreadsheet

Air quality modeling Air Emissions Risk Analysis (AERA)

Risk Assessment Screening Spreadsheet (**RASS**)

Doc Type: Air Emissions Risk Assessment - External Documentation

RASS version: 2020-12

The Risk Analysis Screening Spreadsheet (RASS) has several linked **input** and **output** worksheets that produce screening risk values. The worksheet tabs are color-coded as follows:

Input pages
Outputs
Data and reference tables

The following worksheets are included in this workbook:

README: General overview and instructions on spreadsheet use.

Remediation Emission Calculator: Input site information, system parameters, chemicals, CAS numbers, and analytical results in the yellow-shaded cells. For site-specific modeling, you must additionally enter the AERMOD calculated dispersion factors in the StkDisp tab. Once the site emissions have been estimated in this worksheet, enter the chemical specific emission rates for pounds per hour or tons per year in the Emissions (start here) worksheet. If more that ten chemicals are of itnerest at the site, copy the additional rows needed.

Emissions (input): The user enters facility information in the yellow area at the top of the spreadsheet. The user also inputs emission rates for each chemical listed that is potentially emitted from the facility. User enters short-term chemical emission rates in pounds per hour and long-term chemical emission rates in tons per year for each chemical found on the spreadsheet that is emitted or is potentially emitted at the facility. These rates must be individually calculated and entered; the spreadsheet does not calculate one from the other**.** Brief guidance on merging stacks can be found below.

Dispersion (input): The user inputs stack height and receptor distance in the top portion of the screen to use the dispersion factor look-up tables (Disp Tables worksheet). Brief guidance on merging stacks can be found below. Results from the automated lookup process can be over-written by manually entering dispersion factors from more refined dispersion modeling into the lower half of the worksheet.

Summary (output): Summarizes results from spreadsheet analysis. Individual chemical screening hazard quotients and cancer risks are summed to obtain a total screening hazard index for acute, subchronic and chronic noncancer inhalation effects and a total screening incremental inhalation cancer index. Total hazard and cancer indices for indirect (non-inhalation) pathways are also shown. Land use plans and actual receptors in the vicinity of the facility determine whether both farmer and resident risks are considered. If land use information is not available, facility risks are assumed to be those for the farmer scenario.

Risk Calcs (output): Air concentrations are compared to noncancer acute and chronic inhalation health benchmarks (IHBs) in the Tox Values worksheet to estimate screening inhalation hazard quotients and screening incremental inhalation cancer quotients. The resulting inhalation chronic hazard quotients and incremental cancer risks are multiplied by multimedia factors for a farmer and a resident to obtain screening level risks from indirect (non-inhalation) pathways. The total risks for inhalation and indirect pathways are then computed for individual chemicals and for all pathways. This page has been designed to automatically highlight those cells in which the chemical has a noncancer hazard quotient above 0.1 or a cancer risk above 10e-06.

Concs (output): Hourly, 3-hour, 24-hour, monthly and annual air concentrations representing maximum crieria pollutant and air toxics concentrations at or beyond the receptor distance selected in the StkDisp worksheet are calculated by multiplying dispersion factors (µg/m3 per g/s) and emission rates.

Note: The "Acute" trichloroethylene (TCE) health impacts are estimated from the 24 hour dispersion information. The toxicity value is derived for short term (24 hour) and not for hourly exposures.

Tox Values: (reference) A list of inhalation health benchmark values used in the acute, subchronic noncancer, chronic nonchancer and cancer inhalation risk calculations.

MPS Factors (reference): Multipliers applied to inhalation risks to compute screening level ingestion hazard quotients and cancer risks for persistent bioaccumulative toxic chemicals. These multipliers were derived using the Industrial Risk Assessment Program software, which incorporates algorithms found in USEPA's July 1998 Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities.

Early Life Adjust (reference): This table identifies the carcinogens that should be adjusted to account for potential early life exposures.

Disp Tables (reference): Conservative dispersion factors dependent on the stack height and receptor distance input in the Dispersion worksheet. These hourly, 24-hour, monthly and annual factors are used to estimate the maximum air concentrations at or beyond the receptor distance selected. Dispersion factor units are µg/m^3 per g/s.

Combining Stacks with Similar Dispersion Characteristics

To accommodate multiple stacks more efficiently, it may be helpful to group stacks with similar dispersion characteristics such as stack height, stack diameter, exit velocity, exit temperature, and proximity to similarly sized buildings. "Similar" means stacks are located within approximately 100 meters of each other near similar sized buildings and stack parameters vary less than 20 percent.*

Combining Stacks for Use with Look-Up Table

Create different groups of stacks by combining those with similar heights in each group. Within each group, select the shortest stack height in the group. The look-up table reflects generally worst-case conditions for other parameters (i.e., stack diameter, stack exit velocity, stack exit temperature, and stack-to-building geometry).

* See EPA document titled "Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised". Pages 2-2 and 2-3 offer a more complex method for combining similar stacks. However, it must be repeated for each pollutant – this can be tedious if there are many pollutants (i.e., it uses individual stack emission rates and stack parameters). It may be useful for refined follow-up reviews (e.g., risk driver pollutants), but not the initial screening.

Remediation Program Air Emissions Calculator

Soil Vapor Extraction (SVE) and/or Air Stripper (AS) Data Input Worksheet

MPCA Leak ID:	**SVE - Enter Standard Parameters**	**Air Stripper - Enter Standard Parameters**	
Sample Date:	SVE Stack Flow Rate (SCFM[1]):	Air Stripper Influent Flow Rate (L/s):	10
Person Completing Worksheet:	SVE Stack Flow Rate (m^3/sec):		

Notes: Use this area to provide comments regarding the sampling event, input parameters, etc.

Chemical Name	CAS #	SVE Emission Concentration (µg/m^3)	SVE Emission Rate (µg/sec)	SVE Emission Rate (lbs/hour)	SVE Emission Rate (tons/year)	AS Influent Groundwater Concentration (µg/L)	AS Effluent Groundwater Concentration (µg/L)	AS Removal Factor (unitless)	AS Emission Rate (µg/sec)	AS Emission Rate (lbs/hour)	AS Emission Rate (tons/year)	Site Emission Rate (lbs/hour)	Site Emission Rate (tons/year)
Benzene	71-43-2					400	200	0.50	2,000	0.016	0.070	0.016	0.070

[1]SCFM = standard cubic feet per minute based on a standard temperature of 77° F (25° C, 298.15 K) and a standard pressure of 1 atmosphere (14.7 pounds per square inch, 29.92 inches of mercury, 760 millimeters of mercury).

RASS version: 2020-12 **Facility name:** Water Gremlin **Facility TEMPO ID:** **Date:** Jun-22

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		Total Facility Emissions	STRU1		STRU73								
			(tons/yr)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
202-94-8	11H-Benz[b,c]aceanthrylene		0											
202-98-2	4H-Cyclopenta[d,e,f]chrysene		0											
75-07-0	Acetaldehyde		0											
60-35-5	Acetamide		0											
67-64-1	Acetone		0.000141388											
75-86-5	Acetone Cyanohydrin		0											
75-05-8	Acetonitrile		0											
53-96-3	Acetylaminofluorene, 2-		0											
107-02-8	Acrolein		0											
79-06-1	Acrylamide		0											
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-nitro-2-furyl)-		0											
79-10-7	Acrylic acid		0											
107-13-1	Acrylonitrile		0											
111-69-3	Adiponitrile		0											
ALDEHYDES	Aldehydes		0											
309-00-2	Aldrin		0											
ALIPHATIC-MID	Aliphatic Hydrocarbon Streams (Midrange)		0											
107-05-1	Allyl chloride		0											
7429-90-5	Aluminum		0											
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazol, 2-		0											
6109-97-3	Amino-9-ethylcarbazolehydrochloride, 3-		0											
117-79-3	Aminoanthraquinone, 2-		0											
7664-41-7	Ammonia		0											
62-53-3	Aniline		0											
191-26-4	Anthanthrene		0											
7440-36-0	Antimony		0											
ANTIMONY-COMPS	Antimony Compounds		0											
1309-64-4	Antimony trioxide		0											
140-57-8	Aramite		0											
7440-38-2	Arsenic		4.07393E-05											
ARSENIC-COMPS	Arsenic Compounds		0											
1327-53-3	Arsenic Trioxide		0											
7784-42-1	Arsine		0											
1332-21-4	Asbestos (units in fibers)		0											
1332-21-4-LAA	Asbestos, Libby Amphibole (units in fibers)		0											
123-77-3	Azodicarbonamide		0											
10294-40-3	Barium Chromate		0											
199-54-2	Benz[e]aceanthrylene		0											
202-33-5	Benz[j]aceanthrylene		0											
211-91-6	Benz[l]aceanthrylene		0											

RASS version: 2020-12 **Facility name:** Water Gremlin **Facility TEMPO ID:** **Date:** Jun-22

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		Total Facility Emissions	STRU1		STRU73									
			(tons/yr)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	
71-43-2	Benzene		0.000436428												
92-87-5	Benzidine		0												
205-82-3	Benzo(j)fluoranthene		0												
207-08-9	Benzo(k)fluoranthene		0												
56-55-3	Benzo[a]anthracene		0												
50-32-8	Benzo[a]pyrene		0												
205-99-2	Benzo[b]fluoranthene		0												
205-12-9	Benzo[c]fluorene		0												
191-24-2	Benzo[g,h,i]perylene		0												
65-85-0	Benzoic Acid		0												
100-44-7	Benzyl chloride		5.47307E-05												
7440-41-7	Beryllium		2.44436E-06												
BERYLLIUM-COMPS	Beryllium Compounds		0												
13510-49-1	Beryllium sulfate		0												
111-44-4	Bis(2-chloroethyl)ether		0												
117-81-7	Bis(2-ethylhexyl)phthalate (DEHP)		0												
542-88-1	Bis(chloromethyl)ether		0												
7440-42-8	Boron And Borates Only		0												
10294-34-5	Boron Trichloride		0												
7637-07-2	Boron Trifluoride		0												
108-86-1	Bromobenzene		0												
74-97-5	Bromochloromethane		0												
75-27-4	Bromodichloromethane		2.85056E-05												
75-25-2	Bromoform		0.000109461												
74-83-9	Bromomethane		1.59631E-05												
106-94-5	Bromopropane, 1-		0												
106-99-0	Butadiene, 1,3-		9.34982E-06												
78-92-2	Butyl alcohol, sec-		0												
111-76-2	Butyl Cellosolve (ethylene glycol monobutyl		0												
25013-16-5	Butylated hydroxyanisole		0												
3068-88-0	Butyrolactone, beta-		0												
7440-43-9	Cadmium		0.000224066												
CADMIUM-COMPS	Cadmium Compounds		0												
13765-19-0	Calcium Chromate		0												
105-60-2	Caprolactum		0												
75-15-0	Carbon disulfide		1.36827E-05												
630-08-0	Carbon Monoxide		18.44961965												
56-23-5	Carbon tetrachloride		2.62251E-05												
463-58-1	Carbonyl sulfide		0												
111-15-9	Cellosolve Acetate (ethylene glycol monoet		0												

RASS version: 2020-12 **Facility name:** Water Gremlin **Facility TEMPO ID:** **Date:** Jun-22

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		Total Facility Emissions	STRU1		STRU73								
			(tons/yr)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
1306-38-3	Cerium Oxide and Cerium Compounds		0											
12789-03-6	Chlordane or (57-74-9)		0											
115-28-6	Chlorendic acid		0											
108171-26-2	Chlorinated Paraffins (C12, 60% Chlorine)		0											
7782-50-5	Chlorine		0											
10049-04-4	Chlorine Oxide (CLO2)		0											
75-68-3	Chloro-1,1-difluoroethane, 1- (HCFC-142b)		0											
563-47-3	Chloro-2-methylpropene, 3-		0											
95-83-0	Chloro-o-phenylenediamine, 4-		0											
95-69-2	Chloro-o-toluidine, p-		0											
532-27-4	Chloroacetophenone, 2-		0											
108-90-7	Chlorobenzene		1.93838E-05											
98-56-6	Chlorobenzotrifluoride, 4-		0											
75-45-6	Chlorodifluoromethane (HCFC-22)		0											
67-66-3	Chloroform		1.0376E-05											
107-30-2	Chloromethyl Methyl Ether		0											
88-73-3	Chloronitrobenzene, o-		0											
100-00-5	Chloronitrobenzene, p-		0											
76-06-2	Chloropicrin		0											
126-99-8	Chloroprene		0											
1333-82-0	Chromic acid mists and dissolved Cr(VI) ae		0											
7440-47-3	Chromium		0											
18540-29-9	Chromium (Hexavalent)		2.85175E-05											
18540-29-9-pm	Chromium (Hexavalent) - Particulate		0											
CHROM-COMPS	Chromium Compounds		0											
16065-83-1	Chromium(III) Compounds		0.000256657											
218-01-9	Chrysene (Benzo(a)phenanthrene)		0											
87-29-6	Cinnamyl anthranilate		0											
10061-01-5	cis-1,3-Dichloropropene		4.78893E-05											
8007-45-2	Coal Tar		0											
7440-48-4	Cobalt		1.71105E-05											
0-00-7	Coke Oven Emissions		0											
7440-50-8	Copper		0											
COPPER-COMPS	Copper Compounds		0											
120-71-8	Cresidine, p-		0											
108-39-4	Cresol, m-		0											
95-48-7	Cresol, o-		0											
106-44-5	Cresol, p-		0											
1319-77-3	Cresols/Cresylic acid (isomers and mixture)		0											
98-82-8	Cumene		0											

RASS version: 2020-12 **Facility name:** Water Gremlin **Facility TEMPO ID:** **Date:** Jun-22

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		Total Facility Emissions	STRU1		STRU73									
			(tons/yr)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	
135-20-6	Cupferron		0												
57-12-5	Cyanide (Cyanide ion, Inorganic cyanides, I		0												
CYANIDE-COMPS	Cyanide Compounds		0												
110-82-7	Cyclohexane		3.64871E-05												
108-94-1	Cyclohexanone		0												
27208-37-3	Cyclopenta[c,d]pyrene		0												
50-29-3	DDT		0												
615-05-4	Diaminoanisole, 2,4-		0												
101-80-4	Diaminodiphenyl ether, 4,4-		0												
103-33-3	Diazene, Diphenyl		0												
226-36-8	Dibenz(a,h)acridine		0												
224-42-0	Dibenz(a,j)acridine		0												
53-70-3	Dibenz[a,h]anthracene		0												
192-65-4	Dibenzo(a,e)pyrene		0												
189-64-0	Dibenzo(a,h)pyrene		0												
191-30-0	Dibenzo(a,l)pyrene		0												
194-59-2	Dibenzo(c,g)carbazole, 7H-		0												
5385-75-1	Dibenzo[a,e]fluoranthene		0												
189-55-9	Dibenzo[a,i]pyrene		0												
96-12-8	Dibromo-3-chloropropane, 1,2-		0												
764-41-0	Dichloro-2-butene, 1,4-		0												
1476-11-5	Dichloro-2-butene, cis-1,4-		0												
106-46-7	Dichlorobenzene(p), 1,4-		6.38525E-05												
25321-22-6	Dichlorobenzenes		0.000244436												
91-94-1	Dichlorobenzidene, 3,3-		0												
75-71-8	Dichlorodifluoromethane (CFC-12)		0.00015279												
75-35-4	Dichloroethylene (1,1-) (Vinylidene chloride)		1.71033E-05												
156-60-5	Dichloroethylene, trans-1,2-		38.72841744			17.35	37.50								
542-75-6	Dichloropropene, 1,3-		0												
78-88-6	Dichloropropene, 2,3-		0												
62-73-7	Dichlorvos		0												
77-73-6	Dicyclopentadiene		0												
60-57-1	Dieldrin		0												
0-02-4	Diesel exhaust particulate		0												
111-42-2	Diethanolamine		0												
112-34-5	Diethylene Glycol Monobutyl Ether		0												
111-90-0	Diethylene Glycol Monoethyl Ether		0												
75-37-6	Difluoroethane, 1,1-		0												
108-20-3	Diisopropyl Ether		0												
60-11-7	Dimethyl aminoazobenzene		0												

RASS version: 2020-12 **Facility name:** Water Gremlin **Facility TEMPO ID:** **Date:** Jun-22

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		Total Facility Emissions	STRU1		STRU73								
			(tons/yr)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
68-12-2	Dimethyl formamide		0											
108-01-0	Dimethylamino ethanol, 2-		0											
57-97-6	Dimethylbenz[a]anthracene, 7,12-		0											
57-14-7	Dimethylhydrazine, 1,1-		0											
42397-64-8	Dinitropyrene, 1,6- (BaP)		0											
42397-65-9	Dinitropyrene, 1,8- (BaP)		0											
121-14-2	Dinitrotoluene, 2,4-		0											
123-91-1	Dioxane, 1,4- (1,4-Diethylene dioxide)		0											
122-66-7	Diphenylhydrazine, 1,2-		0											
106-89-8	Epichlorohydrin (l-Chloro-2,3-epoxypropane		0											
106-88-7	Epoxybutane, 1,2-		0											
110-80-5	Ethoxyethanol, 2- (ethylene glycol monoeth		0											
141-78-6	Ethyl acetate		1.48229E-05											
140-88-5	Ethyl Acrylate		0											
100-41-4	Ethyl benzene		4.56089E-05											
51-79-6	Ethyl carbamate (Urethane)		0											
75-00-3	Ethyl chloride (Chloroethane)		1.11742E-05											
97-63-2	Ethyl Methacrylate		0											
106-93-4	Ethylene dibromide (Dibromoethane)		1.59631E-05											
107-06-2	Ethylene dichloride (1,2-Dichloroethane)		1.71033E-05											
107-21-1	Ethylene glycol		0											
75-21-8	Ethylene oxide		0											
96-45-7	Ethylene thiourea		0											
75-34-3	Ethylidene dichloride (1,1-Dichloroethane)		0.000108321											
206-44-0	Fluoranthene		0											
FLUORIDES	Fluorides (except hydrogen fluoride)		0											
50-00-0	Formaldehyde		0.015277231											
64-18-6	Formic Acid		0											
111-30-8	Glutaraldehyde		0											
0-01-2	Glycol ethers		0											
76-44-8	Heptachlor		0											
1024-57-3	Heptachlor epoxide		0											
35822-46-9	Heptachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8-		0											
00-08-5	Heptachlorodibenzodioxin, All Isomers		0											
67562-39-4	Heptachlorodibenzofuran, 1,2,3,4,6,7,8-		0											
55673-89-7	Heptachlorodibenzofuran, 1,2,3,4,7,8,9-		0											
00-08-4	Heptachlorodibenzofuran, All Isomers		0											
142-82-5	Heptane, N		1.71033E-05											
118-74-1	Hexachlorobenzene		0											
87-68-3	Hexachlorobutadiene		0.000112882											

RASS version: 2020-12 **Facility name:** Water Gremlin **Facility TEMPO ID:** **Date:** Jun-22

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		Total Facility Emissions	STRU1		STRU73									
			(tons/yr)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
608-73-1	Hexachlorocyclohexane (technical grade)		0												
319-84-6	Hexachlorocyclohexane, alpha-		0												
319-85-7	Hexachlorocyclohexane, beta-1,2,3,4,5,6-		0												
77-47-4	Hexachlorocyclopentadiene		0												
39227-28-6	Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-		0												
57653-85-7	Hexachlorodibenzo-p-dioxin, 1,2,3,6,7,8-		0												
19408-74-3	Hexachlorodibenzo-p-dioxin, 1,2,3,7,8,9-		0												
00-08-3	Hexachlorodibenzodioxins, All Isomers		0												
70648-26-9	Hexachlorodibenzofuran, 1,2,3,4,7,8-		0												
57117-44-9	Hexachlorodibenzofuran, 1,2,3,6,7,8-		0												
72918-21-9	Hexachlorodibenzofuran, 1,2,3,7,8,9-		0												
60851-34-5	Hexachlorodibenzofuran, 2,3,4,6,7,8-		0												
00-08-2	Hexachlorodibenzofurans, All Isomers		0												
67-72-1	Hexachloroethane		0												
822-06-0	Hexamethylene-1,6-diisocyanate		0												
110-54-3	Hexane		0.366668374												
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl-1-hexanol)		0												
591-78-6	Hexanone-2		8.66569E-05												
302-01-2	Hydrazine		0												
10034-93-2	Hydrazine sulfate		0												
7647-01-0	Hydrochloric acid (hydrogen chloride)		0												
74-90-8	Hydrogen cyanide		0												
7664-39-3	Hydrogen fluoride (Hydrofluoric acid)		0												
7783-07-5	Hydrogen selenide		0												
7783-06-4	Hydrogen sulfide		0												
193-39-5	Indeno(1,2,3-cd)pyrene		0												
5888-33-5	Isobornyl acrylate		1.134006653			0.245020878	1.07319145								
78-59-1	Isophorone		0												
67-63-0	Isopropyl alcohol		6.04318E-05												
7439-92-1	Lead		0												
7758-97-6	Lead Chromate		0												
LEAD-COMPS	Lead Compounds		0												
58-89-9	Lindane (all isomers)		0												
108-31-6	Maleic anhydride		0												
7439-96-5	Manganese		8.38211E-05												
MANGANESE-COMP	Manganese Compounds		0												
7439-97-6	Mercury (elemental)		5.29611E-05												
MERCURY-COMPS	Mercury Compounds		0												
126-98-7	Methacrylonitrile		0												
67-56-1	Methanol		0												

RASS version: 2020-12 **Facility name:** Water Gremlin **Facility TEMPO ID:** **Date:** Jun-22

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		Total Facility Emissions	STRU1		STRU73								
			(tons/yr)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
109-86-4	Methoxyethanol, 2- (ethylene glycol monom		0											
96-33-3	Methyl acrylate		0											
110-49-6	Methyl Cellosolve Acetate		0											
74-87-3	Methyl chloride (Chloromethane)		1.48229E-05											
71-55-6	Methyl chloroform (1,1,1-Trichloroethane)		0.000539325											
78-93-3	Methyl ethyl ketone (2-Butanone)		6.27122E-05											
60-34-4	Methyl Hydrazine		0											
108-10-1	Methyl isobutyl ketone (Hexone)		8.66569E-05											
624-83-9	Methyl isocyanate		0											
80-62-6	Methyl methacrylate		0											
1634-04-4	Methyl tert butyl ether		7.63949E-05											
56-49-5	Methylcholanthrene, 3-		0											
3697-24-3	Methylchrysene, 5-		0											
101-14-4	Methylene bis(2-chloroaniline), 4,4-		0											
74-95-3	Methylene Bromide		0											
75-09-2	Methylene chloride (Dichloromethane)		7.41145E-05											
101-68-8	Methylene diphenyl diisocyanate (MDI)		0											
101-77-9	Methylenedianiline, 4,4-		0											
90-94-8	Michler's ketone		0											
10595-95-6	N- Nitrosomethylethylamine		0											
924-16-3	N-Nitrosodi-n-butylamine		0											
621-64-7	N-Nitrosodi-n-propylamine		0											
55-18-5	N-Nitrosodiethylamine		0											
62-75-9	N-Nitrosodimethylamine		0											
86-30-6	N-Nitrosodiphenylamine		0											
59-89-2	N-Nitrosomorpholine		0											
100-75-4	N-Nitrosopiperidine		0											
111-84-2	N-Nonane		0											
64724-95-6	Naphtha, High Flash Aromatic (HFAN)		0											
91-20-3	Naphthalene		0.000180126											
193-09-9	Naphtho[2,3-e]pyrene		0											
7440-02-0	Nickel		0.000427762											
NICKEL-COMPS	Nickel Compounds		0											
1313-99-1	Nickel oxide		0											
0-02-5	Nickel refinery dust from the pyrometallurgic		0											
12035-72-2	Nickel sulfide (NI3S2)		0											
7697-37-2	Nitric acid		0											
139-13-9	Nitrilotriacetic acid		0											
18662-53-8	Nitrilotriacetic acid, trisodium salt monohydr		0											
602-87-9	Nitroacenaphthene, 5-		0											

RASS version: 2020-12 **Facility name:** Water Gremlin **Facility TEMPO ID:** **Date:** Jun-22

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		Total Facility Emissions	STRU1		STRU73									
			(tons/yr)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	
88-74-4	Nitroaniline, 2-		0												
100-01-6	Nitroaniline, 4-		0												
98-95-3	Nitrobenzene		0												
7496-02-8	Nitrochrysene, 6-		0												
607-57-8	Nitrofluorene, 2-		0												
10102-44-0	Nitrogen dioxide (NO2)		20.36964174												
75-52-5	Nitromethane		0												
79-46-9	Nitropropane, 2-		0												
5522-43-0	Nitropyrene, 1-		0												
57835-92-4	Nitropyrene, 4-		0												
156-10-5	Nitrosodiphenylamine, p-		0												
3268-87-9	Octachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8,9-		0												
39001-02-0	Octachlorodibenzofuran, 1,2,3,4,6,7,8,9-		0												
10028-15-6	Ozone		0												
74472-37-0	PCB 114 (2,3,4,4,5 Pentachlorobiphenyl)		0												
31508-00-6	PCB 118 (2,3,4,4,5 Pentachlorobiphenyl)		0												
65510-44-3	PCB 123 (2,3,4,4,5 Pentachlorobiphenyl)		0												
57465-28-8	PCB 126 (3,3,4,4,5 Pentachlorobiphenyl)		0												
38380-0804	PCB 156 (2,3,3,4,4,5 Hexachlorobiphenyl)		0												
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexachlorobiphenyl)		0												
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexachlorobiphenyl)		0												
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexachlorobiphenyl)		0												
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Heptachlorobipheny		0												
32598-13-3	PCB 77 (3,3,4,4-Tetrachlorobiphenyl)		0												
70362-50-4	PCB 81 (3,4,4,5 Tetrachlorobiphenyl)		0												
32598-14-4	PCB105 (2,3,3,4,4 Pentachlorobiphenyl)		0												
40321-76-4	Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-		0												
00-08-1	Pentachlorodibenzodioxins, All Isomers		0												
57117-41-6	Pentachlorodibenzofuran, 1,2,3,7,8-		0												
57117-31-4	Pentachlorodibenzofuran, 2,3,4,7,8-		0												
00-09-0	Pentachlorodibenzofurans, All Isomers		0												
87-86-5	Pentachlorophenol		0												
109-66-0	Pentane, n-		0												
ALIPHATIC-C5-C8	Petroleum Hydrocarbons, Aliphatic Low (C5		0												
ALIPHATIC-C9-C18	Petroleum Hydrocarbons, Aliphatic Medium		0.146651362												
AROMATIC-C6-C8	Petroleum Hydrocarbons, Aromatic Low (C6		0												
AROMATIC-C9-C16	Petroleum Hydrocarbons, Aromatic Medium		0												
85-01-8	Phenanthrene		0												
108-95-2	Phenol		0												
75-44-5	Phosgene		0												

RASS version: 2020-12 **Facility name:** Water Gremlin **Facility TEMPO ID:** **Date:** Jun-22

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		Total Facility Emissions	STRU1		STRU73								
			(tons/yr)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
7803-51-2	Phosphine		0											
7664-38-2	Phosphoric acid		0											
85-44-9	Phthalic anhydride		0											
59536-65-1	Polybrominated Biphenyls		0											
1336-36-3	Polychlorinated biphenyls (Aroclors unspeci		0											
00-08-0	Polychlorinated Dibenzo-P-Dioxins And Fur		0											
00-05-0	Polychlorinated Dibenzodioxins, Total		0											
00-05-1	Polychlorinated Dibenzofurans, Total		0											
130498-29-2	Polycyclic Aromatic Hydrocarbons (PAH)		0											
00-01-7	Polycyclic Organic Matter (POM)		1.7966E-05											
9016-87-9	Polymeric diphenylmethane diisocyanate		0											
7758-01-2	Potassium bromate		0											
1120-71-4	Propane sultone, 1,3-		0											
57-57-8	Propiolactone, beta-		0											
123-38-6	Propionaldehyde		0											
115-07-1	Propylene		1.82436E-05											
78-87-5	Propylene dichloride (1,2-Dichloropropane)		1.93838E-05											
107-98-2	Propylene Glycol Monomethyl Ether		0											
75-56-9	Propylene oxide		0											
930-55-2	Pyrrolidine, 1-Nitroso-		0											
7782-49-2	Selenium		4.88871E-06											
0-01-9	Selenium Compounds		0											
7631-86-9	Silica (crystalline, respirable, PM4)		0											
1310-73-2	Sodium hydroxide		0											
10588-01-9	Sodium Dichromate		0											
7789-06-2	Strontium chromate		0											
100-42-5	Styrene		1.82436E-05											
96-09-3	Styrene oxide		0											
14808-79-8	Sulfates		0											
126-33-0	Sulfolane		0											
7446-09-5	Sulfur dioxide		5.437180323											
7664-93-9	Sulfuric acid (aerosol forms only)		0											
8014-95-7	Sulfuric Acid mixture w. sulfur trioxide (oleu		0											
00-09-1	TCDD Eqivalents, 2,3,7,8-		0											
540-88-5	Tert-Butyl Acetate		0											
1746-01-6	Tetrachlorodibenzo-p-dioxin, 2,3,7,8-		0											
00-08-8	Tetrachlorodibenzodioxins, All Isomers		0											
51207-31-9	Tetrachlorodibenzofuran, 2,3,7,8-		0											
00-08-6	Tetrachlorodibenzofurans, All Isomers		0											
630-20-6	Tetrachloroethane, 1,1,1,2-		0											

RASS version: 2020-12 **Facility name:** Water Gremlin **Facility TEMPO ID:** **Date:** Jun-22

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		Total Facility Emissions	STRU1		STRU73									
			(tons/yr)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	
79-34-5	Tetrachloroethane, 1,1,2,2-		2.96458E-05												
127-18-4	Tetrachloroethylene (Perchloroethylene)		1.48229E-05												
811-97-2	Tetrafluoroethane, 1,1,1,2-		0												
109-99-9	Tetrahydrofuran		1.25424E-05												
62-55-5	Thioacetamide		0												
62-56-6	Thiourea		0												
108-88-3	Toluene		0.000708531												
584-84-9	Toluene-2,4-diisocyanate		0												
91-08-7	Toluene-2,6-diisocyanate		0												
95-80-7	Toluene diamine, 2,4-		0												
26471-62-5	Toluenediisocyanate (mixed isomers)		0												
95-53-4	Toluidine, o- (Methylaniline, 2-)		0												
8001-35-2	Toxaphene (chlorinated camphene)		0												
10061-02-6	trans-1,3-Dichloropropene		4.78893E-05												
120-82-1	Trichlorobenzene, 1,2,4-		0.000157351												
79-00-5	Trichloroethane, 1,1,2-		1.14022E-05												
79-01-6	Trichloroethylene (TCE)		0.00025655												
75-69-4	Trichlorofluoromethane (CFC-11)		2.39447E-05												
88-06-2	Trichlorophenol, 2,4,6-		0												
96-18-4	Trichloropropane, 1,2,3-		0												
96-19-5	Trichloropropene, 1,2,3-		0												
76-13-1	Trichlorotrifluoroethane, 1,1,2- (CFC-13)		3.30665E-05												
121-44-8	Triethylamine		0												
420-46-2	Trifluoroethane, 1,1,1-		0												
526-73-8	Trimethylbenzene, 1,2,3-		0												
95-63-6	Trimethylbenzene, 1,2,4-		2.0524E-05												
108-67-8	Trimethylbenzene, 1,3,5-		2.0524E-05												
URANIUM-SOLUBLE	Uranium (Soluble Salts)		0												
7440-61-1	Uranium, Insoluble Compounds		0												
7440-62-2	Vanadium and Compounds		0												
1314-62-1	Vanadium Pentoxide, (V2O5)		0												
108-05-4	Vinyl acetate		1.48229E-05												
593-60-2	Vinyl bromide		0												
75-01-4	Vinyl chloride		5.47307E-06												
1330-20-7	Xylenes		0.000110602												
108-38-3	Xylenes, m-		0												
95-47-6	Xylenes, o-		0												
106-42-3	Xylenes, p-		0												
13530-65-9	Zinc chromate		0												

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name								STRU15		STRU16		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
202-94-8	11H-Benz[b,c]aceanthrylene													
202-98-2	4H-Cyclopenta[d,e,f]chrysene													
75-07-0	Acetaldehyde													
60-35-5	Acetamide													
67-64-1	Acetone													
75-86-5	Acetone Cyanohydrin													
75-05-8	Acetonitrile													
53-96-3	Acetylaminofluorene, 2-													
107-02-8	Acrolein													
79-06-1	Acrylamide													
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-nitro-2-furyl)-													
79-10-7	Acrylic acid													
107-13-1	Acrylonitrile													
111-69-3	Adiponitrile													
ALDEHYDES	Aldehydes													
309-00-2	Aldrin													
ALIPHATIC-MID	Aliphatic Hydrocarbon Streams (Midrange)													
107-05-1	Allyl chloride													
7429-90-5	Aluminum													
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazol, 2-													
6109-97-3	Amino-9-ethylcarbazolehydrochloride, 3-													
117-79-3	Aminoanthraquinone, 2-													
7664-41-7	Ammonia													
62-53-3	Aniline													
191-26-4	Anthanthrene													
7440-36-0	Antimony													
ANTIMONY-COMPS	Antimony Compounds													
1309-64-4	Antimony trioxide													
140-57-8	Aramite													
7440-38-2	Arsenic													
ARSENIC-COMPS	Arsenic Compounds													
1327-53-3	Arsenic Trioxide													
7784-42-1	Arsine													
1332-21-4	Asbestos (units in fibers)													
1332-21-4-LAA	Asbestos, Libby Amphibole (units in fibers)													
123-77-3	Azodicarbonamide													
10294-40-3	Barium Chromate													
199-54-2	Benz[e]aceanthrylene													
202-33-5	Benz[j]aceanthrylene													

211-91-6 Benz[l]aceanthrylene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name								STRU15		STRU16		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
71-43-2	Benzene													
92-87-5	Benzidine													
205-82-3	Benzo(j)fluoranthene													
207-08-9	Benzo(k)fluoranthene													
56-55-3	Benzo[a]anthracene													
50-32-8	Benzo[a]pyrene													
205-99-2	Benzo[b]fluoranthene													
205-12-9	Benzo[c]fluorene													
191-24-2	Benzo[g,h,i]perylene													
65-85-0	Benzoic Acid													
100-44-7	Benzyl chloride													
7440-41-7	Beryllium													
BERYLLIUM-COMPS	Beryllium Compounds													
13510-49-1	Beryllium sulfate													
111-44-4	Bis(2-chloroethyl)ether													
117-81-7	Bis(2-ethylhexyl)phthalate (DEHP)													
542-88-1	Bis(chloromethyl)ether													
7440-42-8	Boron And Borates Only													
10294-34-5	Boron Trichloride													
7637-07-2	Boron Trifluoride													
108-86-1	Bromobenzene													
74-97-5	Bromochloromethane													
75-27-4	Bromodichloromethane													
75-25-2	Bromoform													
74-83-9	Bromomethane													
106-94-5	Bromopropane, 1-													
106-99-0	Butadiene, 1,3-													
78-92-2	Butyl alcohol, sec-													
111-76-2	Butyl Cellosolve (ethylene glycol monobutyl													
25013-16-5	Butylated hydroxyanisole													
3068-88-0	Butyrolactone, beta-													
7440-43-9	Cadmium													
CADMIUM-COMPS	Cadmium Compounds													
13765-19-0	Calcium Chromate													
105-60-2	Caprolactum													
75-15-0	Carbon disulfide													
630-08-0	Carbon Monoxide													
56-23-5	Carbon tetrachloride													
463-58-1	Carbonyl sulfide													

111-15-9 Cellosolve Acetate (ethylene glycol monoet

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name								STRU15		STRU16		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
1306-38-3	Cerium Oxide and Cerium Compounds													
12789-03-6	Chlordane or (57-74-9)													
115-28-6	Chlorendic acid													
108171-26-2	Chlorinated Paraffins (C12, 60% Chlorine)													
7782-50-5	Chlorine													
10049-04-4	Chlorine Oxide (CLO2)													
75-68-3	Chloro-1,1-difluoroethane, 1- (HCFC-142b)													
563-47-3	Chloro-2-methylpropene, 3-													
95-83-0	Chloro-o-phenylenediamine, 4-													
95-69-2	Chloro-o-toluidine, p-													
532-27-4	Chloroacetophenone, 2-													
108-90-7	Chlorobenzene													
98-56-6	Chlorobenzotrifluoride, 4-													
75-45-6	Chlorodifluoromethane (HCFC-22)													
67-66-3	Chloroform													
107-30-2	Chloromethyl Methyl Ether													
88-73-3	Chloronitrobenzene, o-													
100-00-5	Chloronitrobenzene, p-													
76-06-2	Chloropicrin													
126-99-8	Chloroprene													
1333-82-0	Chromic acid mists and dissolved Cr(VI) ae													
7440-47-3	Chromium													
18540-29-9	Chromium (Hexavalent)													
18540-29-9-pm	Chromium (Hexavalent) - Particulate													
CHROM-COMPS	Chromium Compounds													
16065-83-1	Chromium(III) Compounds													
218-01-9	Chrysene (Benzo(a)phenanthrene)													
87-29-6	Cinnamyl anthranilate													
10061-01-5	cis-1,3-Dichloropropene													
8007-45-2	Coal Tar													
7440-48-4	Cobalt													
0-00-7	Coke Oven Emissions													
7440-50-8	Copper													
COPPER-COMPS	Copper Compounds													
120-71-8	Cresidine, p-													
108-39-4	Cresol, m-													
95-48-7	Cresol, o-													
106-44-5	Cresol, p-													
1319-77-3	Cresols/Cresylic acid (isomers and mixture)													

98-82-8 Cumene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name								STRU15		STRU16		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
135-20-6	Cupferron													
57-12-5	Cyanide (Cyanide ion, Inorganic cyanides, I													
CYANIDE-COMPS	Cyanide Compounds													
110-82-7	Cyclohexane													
108-94-1	Cyclohexanone													
27208-37-3	Cyclopenta[c,d]pyrene													
50-29-3	DDT													
615-05-4	Diaminoanisole, 2,4-													
101-80-4	Diaminodiphenyl ether, 4,4-													
103-33-3	Diazene, Diphenyl													
226-36-8	Dibenz(a,h)acridine													
224-42-0	Dibenz(a,j)acridine													
53-70-3	Dibenz[a,h]anthracene													
192-65-4	Dibenzo(a,e)pyrene													
189-64-0	Dibenzo(a,h)pyrene													
191-30-0	Dibenzo(a,l)pyrene													
194-59-2	Dibenzo(c,g)carbazole, 7H-													
5385-75-1	Dibenzo[a,e]fluoranthene													
189-55-9	Dibenzo[a,i]pyrene													
96-12-8	Dibromo-3-chloropropane, 1,2-													
764-41-0	Dichloro-2-butene, 1,4-													
1476-11-5	Dichloro-2-butene, cis-1,4-													
106-46-7	Dichlorobenzene(p), 1,4-													
25321-22-6	Dichlorobenzenes													
91-94-1	Dichlorobenzidene, 3,3-													
75-71-8	Dichlorodifluoromethane (CFC-12)													
75-35-4	Dichloroethylene (1,1-) (Vinylidene chloride)													
156-60-5	Dichloroethylene, trans-1,2-													
542-75-6	Dichloropropene, 1,3-													
78-88-6	Dichloropropene, 2,3-													
62-73-7	Dichlorvos													
77-73-6	Dicyclopentadiene													
60-57-1	Dieldrin													
0-02-4	Diesel exhaust particulate													
111-42-2	Diethanolamine													
112-34-5	Diethylene Glycol Monobutyl Ether													
111-90-0	Diethylene Glycol Monoethyl Ether													
75-37-6	Difluoroethane, 1,1-													
108-20-3	Diisopropyl Ether													

60-11-7 Dimethyl aminoazobenzene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name								STRU15		STRU16		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
68-12-2	Dimethyl formamide													
108-01-0	Dimethylamino ethanol, 2-													
57-97-6	Dimethylbenz[a]anthracene, 7,12-													
57-14-7	Dimethylhydrazine, 1,1-													
42397-64-8	Dinitropyrene, 1,6- (BaP)													
42397-65-9	Dinitropyrene, 1,8- (BaP)													
121-14-2	Dinitrotoluene, 2,4-													
123-91-1	Dioxane, 1,4- (1,4-Diethylene dioxide)													
122-66-7	Diphenylhydrazine, 1,2-													
106-89-8	Epichlorohydrin (l-Chloro-2,3-epoxypropane													
106-88-7	Epoxybutane, 1,2-													
110-80-5	Ethoxyethanol, 2- (ethylene glycol monoeth													
141-78-6	Ethyl acetate													
140-88-5	Ethyl Acrylate													
100-41-4	Ethyl benzene													
51-79-6	Ethyl carbamate (Urethane)													
75-00-3	Ethyl chloride (Chloroethane)													
97-63-2	Ethyl Methacrylate													
106-93-4	Ethylene dibromide (Dibromoethane)													
107-06-2	Ethylene dichloride (1,2-Dichloroethane)													
107-21-1	Ethylene glycol													
75-21-8	Ethylene oxide													
96-45-7	Ethylene thiourea													
75-34-3	Ethylidene dichloride (1,1-Dichloroethane)													
206-44-0	Fluoranthene													
FLUORIDES	Fluorides (except hydrogen fluoride)													
50-00-0	Formaldehyde													
64-18-6	Formic Acid													
111-30-8	Glutaraldehyde													
0-01-2	Glycol ethers													
76-44-8	Heptachlor													
1024-57-3	Heptachlor epoxide													
35822-46-9	Heptachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8-													
00-08-5	Heptachlorodibenzodioxin, All Isomers													
67562-39-4	Heptachlorodibenzofuran, 1,2,3,4,6,7,8-													
55673-89-7	Heptachlorodibenzofuran, 1,2,3,4,7,8,9-													
00-08-4	Heptachlorodibenzofuran, All Isomers													
142-82-5	Heptane, N													
118-74-1	Hexachlorobenzene													

87-68-3 Hexachlorobutadiene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name								STRU15		STRU16		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
608-73-1	Hexachlorocyclohexane (technical grade)													
319-84-6	Hexachlorocyclohexane, alpha-													
319-85-7	Hexachlorocyclohexane, beta-1,2,3,4,5,6-													
77-47-4	Hexachlorocyclopentadiene													
39227-28-6	Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-													
57653-85-7	Hexachlorodibenzo-p-dioxin, 1,2,3,6,7,8-													
19408-74-3	Hexachlorodibenzo-p-dioxin, 1,2,3,7,8,9-													
00-08-3	Hexachlorodibenzodioxins, All Isomers													
70648-26-9	Hexachlorodibenzofuran, 1,2,3,4,7,8-													
57117-44-9	Hexachlorodibenzofuran, 1,2,3,6,7,8-													
72918-21-9	Hexachlorodibenzofuran, 1,2,3,7,8,9-													
60851-34-5	Hexachlorodibenzofuran, 2,3,4,6,7,8-													
00-08-2	Hexachlorodibenzofurans, All Isomers													
67-72-1	Hexachloroethane													
822-06-0	Hexamethylene-1,6-diisocyanate													
110-54-3	Hexane													
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl-1-hexanol)													
591-78-6	Hexanone-2													
302-01-2	Hydrazine													
10034-93-2	Hydrazine sulfate													
7647-01-0	Hydrochloric acid (hydrogen chloride)													
74-90-8	Hydrogen cyanide													
7664-39-3	Hydrogen fluoride (Hydrofluoric acid)													
7783-07-5	Hydrogen selenide													
7783-06-4	Hydrogen sulfide													
193-39-5	Indeno(1,2,3-cd)pyrene													
5888-33-5	Isobornyl acrylate													
78-59-1	Isophorone													
67-63-0	Isopropyl alcohol													
7439-92-1	Lead													
7758-97-6	Lead Chromate													
LEAD-COMPS	Lead Compounds													
58-89-9	Lindane (all isomers)													
108-31-6	Maleic anhydride													
7439-96-5	Manganese													
MANGANESE-COMP	Manganese Compounds													
7439-97-6	Mercury (elemental)													
MERCURY-COMPS	Mercury Compounds													
126-98-7	Methacrylonitrile													

67-56-1 Methanol

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name								STRU15		STRU16		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
109-86-4	Methoxyethanol, 2- (ethylene glycol monom													
96-33-3	Methyl acrylate													
110-49-6	Methyl Cellosolve Acetate													
74-87-3	Methyl chloride (Chloromethane)													
71-55-6	Methyl chloroform (1,1,1-Trichloroethane)													
78-93-3	Methyl ethyl ketone (2-Butanone)													
60-34-4	Methyl Hydrazine													
108-10-1	Methyl isobutyl ketone (Hexone)													
624-83-9	Methyl isocyanate													
80-62-6	Methyl methacrylate													
1634-04-4	Methyl tert butyl ether													
56-49-5	Methylcholanthrene, 3-													
3697-24-3	Methylchrysene, 5-													
101-14-4	Methylene bis(2-chloroaniline), 4,4-													
74-95-3	Methylene Bromide													
75-09-2	Methylene chloride (Dichloromethane)													
101-68-8	Methylene diphenyl diisocyanate (MDI)													
101-77-9	Methylenedianiline, 4,4-													
90-94-8	Michler's ketone													
10595-95-6	N- Nitrosomethylethylamine													
924-16-3	N-Nitrosodi-n-butylamine													
621-64-7	N-Nitrosodi-n-propylamine													
55-18-5	N-Nitrosodiethylamine													
62-75-9	N-Nitrosodimethylamine													
86-30-6	N-Nitrosodiphenylamine													
59-89-2	N-Nitrosomorpholine													
100-75-4	N-Nitrosopiperidine													
111-84-2	N-Nonane													
64724-95-6	Naphtha, High Flash Aromatic (HFAN)													
91-20-3	Naphthalene													
193-09-9	Naphtho[2,3-e]pyrene													
7440-02-0	Nickel													
NICKEL-COMPS	Nickel Compounds													
1313-99-1	Nickel oxide													
0-02-5	Nickel refinery dust from the pyrometallurgic													
12035-72-2	Nickel sulfide (NI3S2)													
7697-37-2	Nitric acid													
139-13-9	Nitrilotriacetic acid													
18662-53-8	Nitrilotriacetic acid, trisodium salt monohydr													

602-87-9 Nitroacenaphthene, 5-

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name								STRU15		STRU16		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
88-74-4	Nitroaniline, 2-													
100-01-6	Nitroaniline, 4-													
98-95-3	Nitrobenzene													
7496-02-8	Nitrochrysene, 6-													
607-57-8	Nitrofluorene, 2-													
10102-44-0	Nitrogen dioxide (NO2)													
75-52-5	Nitromethane													
79-46-9	Nitropropane, 2-													
5522-43-0	Nitropyrene, 1-													
57835-92-4	Nitropyrene, 4-													
156-10-5	Nitrosodiphenylamine, p-													
3268-87-9	Octachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8,9-													
39001-02-0	Octachlorodibenzofuran, 1,2,3,4,6,7,8,9-													
10028-15-6	Ozone													
74472-37-0	PCB 114 (2,3,4,4,5 Pentachlorobiphenyl)													
31508-00-6	PCB 118 (2,3,4,4,5 Pentachlorobiphenyl)													
65510-44-3	PCB 123 (2,3,4,4,5 Pentachlorobiphenyl)													
57465-28-8	PCB 126 (3,3,4,4,5 Pentachlorobiphenyl)													
38380-0804	PCB 156 (2,3,3,4,4,5 Hexachlorobiphenyl)													
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexachlorobiphenyl)													
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexachlorobiphenyl)													
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexachlorobiphenyl)													
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Heptachlorobipheny													
32598-13-3	PCB 77 (3,3,4,4-Tetrachlorobiphenyl)													
70362-50-4	PCB 81 (3,4,4,5 Tetrachlorobiphenyl)													
32598-14-4	PCB105 (2,3,3,4,4 Pentachlorobiphenyl)													
40321-76-4	Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-													
00-08-1	Pentachlorodibenzodioxins, All Isomers													
57117-41-6	Pentachlorodibenzofuran, 1,2,3,7,8-													
57117-31-4	Pentachlorodibenzofuran, 2,3,4,7,8-													
00-09-0	Pentachlorodibenzofurans, All Isomers													
87-86-5	Pentachlorophenol													
109-66-0	Pentane, n-													
ALIPHATIC-C5-C8	Petroleum Hydrocarbons, Aliphatic Low (C5													
ALIPHATIC-C9-C18	Petroleum Hydrocarbons, Aliphatic Medium													
AROMATIC-C6-C8	Petroleum Hydrocarbons, Aromatic Low (C6													
AROMATIC-C9-C16	Petroleum Hydrocarbons, Aromatic Medium													
85-01-8	Phenanthrene													
108-95-2	Phenol													

75-44-5 Phosgene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name								STRU15		STRU16		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
7803-51-2	Phosphine													
7664-38-2	Phosphoric acid													
85-44-9	Phthalic anhydride													
59536-65-1	Polybrominated Biphenyls													
1336-36-3	Polychlorinated biphenyls (Aroclors unspeci													
00-08-0	Polychlorinated Dibenzo-P-Dioxins And Fur													
00-05-0	Polychlorinated Dibenzodioxins, Total													
00-05-1	Polychlorinated Dibenzofurans, Total													
130498-29-2	Polycyclic Aromatic Hydrocarbons (PAH)													
00-01-7	Polycyclic Organic Matter (POM)													
9016-87-9	Polymeric diphenylmethane diisocyanate													
7758-01-2	Potassium bromate													
1120-71-4	Propane sultone, 1,3-													
57-57-8	Propiolactone, beta-													
123-38-6	Propionaldehyde													
115-07-1	Propylene													
78-87-5	Propylene dichloride (1,2-Dichloropropane)													
107-98-2	Propylene Glycol Monomethyl Ether													
75-56-9	Propylene oxide													
930-55-2	Pyrrolidine, 1-Nitroso-													
7782-49-2	Selenium													
0-01-9	Selenium Compounds													
7631-86-9	Silica (crystalline, respirable, PM4)													
1310-73-2	Sodium hydroxide													
10588-01-9	Sodium Dichromate													
7789-06-2	Strontium chromate													
100-42-5	Styrene													
96-09-3	Styrene oxide													
14808-79-8	Sulfates													
126-33-0	Sulfolane													
7446-09-5	Sulfur dioxide													
7664-93-9	Sulfuric acid (aerosol forms only)													
8014-95-7	Sulfuric Acid mixture w. sulfur trioxide (oleu													
00-09-1	TCDD Eqivalents, 2,3,7,8-													
540-88-5	Tert-Butyl Acetate													
1746-01-6	Tetrachlorodibenzo-p-dioxin, 2,3,7,8-													
00-08-8	Tetrachlorodibenzodioxins, All Isomers													
51207-31-9	Tetrachlorodibenzofuran, 2,3,7,8-													
00-08-6	Tetrachlorodibenzofurans, All Isomers													

630-20-6 Tetrachloroethane, 1,1,1,2-

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name								STRU15		STRU16		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
79-34-5	Tetrachloroethane, 1,1,2,2-													
127-18-4	Tetrachloroethylene (Perchloroethylene)													
811-97-2	Tetrafluoroethane, 1,1,1,2-													
109-99-9	Tetrahydrofuran													
62-55-5	Thioacetamide													
62-56-6	Thiourea													
108-88-3	Toluene													
584-84-9	Toluene-2,4-diisocyanate													
91-08-7	Toluene-2,6-diisocyanate													
95-80-7	Toluene diamine, 2,4-													
26471-62-5	Toluenediisocyanate (mixed isomers)													
95-53-4	Toluidine, o- (Methylaniline, 2-)													
8001-35-2	Toxaphene (chlorinated camphene)													
10061-02-6	trans-1,3-Dichloropropene													
120-82-1	Trichlorobenzene, 1,2,4-													
79-00-5	Trichloroethane, 1,1,2-													
79-01-6	Trichloroethylene (TCE)													
75-69-4	Trichlorofluoromethane (CFC-11)													
88-06-2	Trichlorophenol, 2,4,6-													
96-18-4	Trichloropropane, 1,2,3-													
96-19-5	Trichloropropene, 1,2,3-													
76-13-1	Trichlorotrifluoroethane, 1,1,2- (CFC-13)													
121-44-8	Triethylamine													
420-46-2	Trifluoroethane, 1,1,1-													
526-73-8	Trimethylbenzene, 1,2,3-													
95-63-6	Trimethylbenzene, 1,2,4-													
108-67-8	Trimethylbenzene, 1,3,5-													
URANIUM-SOLUBLE	Uranium (Soluble Salts)													
7440-61-1	Uranium, Insoluble Compounds													
7440-62-2	Vanadium and Compounds													
1314-62-1	Vanadium Pentoxide, (V2O5)													
108-05-4	Vinyl acetate													
593-60-2	Vinyl bromide													
75-01-4	Vinyl chloride													
1330-20-7	Xylenes													
108-38-3	Xylenes, m-													
95-47-6	Xylenes, o-													
106-42-3	Xylenes, p-													
13530-65-9	Zinc chromate													

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U17		STRU74		STRU20		STRU75				STRU23		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	
202-94-8	11H-Benz[b,c]aceanthrylene														
202-98-2	4H-Cyclopenta[d,e,f]chrysene														
75-07-0	Acetaldehyde														
60-35-5	Acetamide														
67-64-1	Acetone														
75-86-5	Acetone Cyanohydrin														
75-05-8	Acetonitrile														
53-96-3	Acetylaminofluorene, 2-														
107-02-8	Acrolein														
79-06-1	Acrylamide														
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-nitro-2-furyl)-														
79-10-7	Acrylic acid														
107-13-1	Acrylonitrile														
111-69-3	Adiponitrile														
ALDEHYDES	Aldehydes														
309-00-2	Aldrin														
ALIPHATIC-MID	Aliphatic Hydrocarbon Streams (Midrange)														
107-05-1	Allyl chloride														
7429-90-5	Aluminum														
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazol, 2-														
6109-97-3	Amino-9-ethylcarbazolehydrochloride, 3-														
117-79-3	Aminoanthraquinone, 2-														
7664-41-7	Ammonia														
62-53-3	Aniline														
191-26-4	Anthanthrene														
7440-36-0	Antimony														
ANTIMONY-COMPS	Antimony Compounds														
1309-64-4	Antimony trioxide														
140-57-8	Aramite														
7440-38-2	Arsenic														
ARSENIC-COMPS	Arsenic Compounds														
1327-53-3	Arsenic Trioxide														
7784-42-1	Arsine														
1332-21-4	Asbestos (units in fibers)														
1332-21-4-LAA	Asbestos, Libby Amphibole (units in fibers)														
123-77-3	Azodicarbonamide														
10294-40-3	Barium Chromate														
199-54-2	Benz[e]aceanthrylene														
202-33-5	Benz[j]aceanthrylene														

211-91-6 Benz[l]aceanthrylene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U17		STRU74		STRU20		STRU75				STRU23		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
71-43-2	Benzene															
92-87-5	Benzidine															
205-82-3	Benzo(j)fluoranthene															
207-08-9	Benzo(k)fluoranthene															
56-55-3	Benzo[a]anthracene															
50-32-8	Benzo[a]pyrene															
205-99-2	Benzo[b]fluoranthene															
205-12-9	Benzo[c]fluorene															
191-24-2	Benzo[g,h,i]perylene															
65-85-0	Benzoic Acid															
100-44-7	Benzyl chloride															
7440-41-7	Beryllium															
BERYLLIUM-COMPS	Beryllium Compounds															
13510-49-1	Beryllium sulfate															
111-44-4	Bis(2-chloroethyl)ether															
117-81-7	Bis(2-ethylhexyl)phthalate (DEHP)															
542-88-1	Bis(chloromethyl)ether															
7440-42-8	Boron And Borates Only															
10294-34-5	Boron Trichloride															
7637-07-2	Boron Trifluoride															
108-86-1	Bromobenzene															
74-97-5	Bromochloromethane															
75-27-4	Bromodichloromethane															
75-25-2	Bromoform															
74-83-9	Bromomethane															
106-94-5	Bromopropane, 1-															
106-99-0	Butadiene, 1,3-															
78-92-2	Butyl alcohol, sec-															
111-76-2	Butyl Cellosolve (ethylene glycol monobutyl															
25013-16-5	Butylated hydroxyanisole															
3068-88-0	Butyrolactone, beta-															
7440-43-9	Cadmium															
CADMIUM-COMPS	Cadmium Compounds															
13765-19-0	Calcium Chromate															
105-60-2	Caprolactum															
75-15-0	Carbon disulfide															
630-08-0	Carbon Monoxide															
56-23-5	Carbon tetrachloride															
463-58-1	Carbonyl sulfide															

111-15-9 Cellosolve Acetate (ethylene glycol monoet

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U17		STRU74		STRU20		STRU75				STRU23		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	
1306-38-3	Cerium Oxide and Cerium Compounds														
12789-03-6	Chlordane or (57-74-9)														
115-28-6	Chlorendic acid														
108171-26-2	Chlorinated Paraffins (C12, 60% Chlorine)														
7782-50-5	Chlorine														
10049-04-4	Chlorine Oxide (CLO2)														
75-68-3	Chloro-1,1-difluoroethane, 1- (HCFC-142b)														
563-47-3	Chloro-2-methylpropene, 3-														
95-83-0	Chloro-o-phenylenediamine, 4-														
95-69-2	Chloro-o-toluidine, p-														
532-27-4	Chloroacetophenone, 2-														
108-90-7	Chlorobenzene														
98-56-6	Chlorobenzotrifluoride, 4-														
75-45-6	Chlorodifluoromethane (HCFC-22)														
67-66-3	Chloroform														
107-30-2	Chloromethyl Methyl Ether														
88-73-3	Chloronitrobenzene, o-														
100-00-5	Chloronitrobenzene, p-														
76-06-2	Chloropicrin														
126-99-8	Chloroprene														
1333-82-0	Chromic acid mists and dissolved Cr(VI) ae														
7440-47-3	Chromium														
18540-29-9	Chromium (Hexavalent)														
18540-29-9-pm	Chromium (Hexavalent) - Particulate														
CHROM-COMPS	Chromium Compounds														
16065-83-1	Chromium(III) Compounds														
218-01-9	Chrysene (Benzo(a)phenanthrene)														
87-29-6	Cinnamyl anthranilate														
10061-01-5	cis-1,3-Dichloropropene														
8007-45-2	Coal Tar														
7440-48-4	Cobalt														
0-00-7	Coke Oven Emissions														
7440-50-8	Copper														
COPPER-COMPS	Copper Compounds														
120-71-8	Cresidine, p-														
108-39-4	Cresol, m-														
95-48-7	Cresol, o-														
106-44-5	Cresol, p-														
1319-77-3	Cresols/Cresylic acid (isomers and mixture)														

98-82-8 Cumene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U17		STRU74		STRU20		STRU75				STRU23		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
135-20-6	Cupferron															
57-12-5	Cyanide (Cyanide ion, Inorganic cyanides, I															
CYANIDE-COMPS	Cyanide Compounds															
110-82-7	Cyclohexane															
108-94-1	Cyclohexanone															
27208-37-3	Cyclopenta[c,d]pyrene															
50-29-3	DDT															
615-05-4	Diaminoanisole, 2,4-															
101-80-4	Diaminodiphenyl ether, 4,4-															
103-33-3	Diazene, Diphenyl															
226-36-8	Dibenz(a,h)acridine															
224-42-0	Dibenz(a,j)acridine															
53-70-3	Dibenz[a,h]anthracene															
192-65-4	Dibenzo(a,e)pyrene															
189-64-0	Dibenzo(a,h)pyrene															
191-30-0	Dibenzo(a,l)pyrene															
194-59-2	Dibenzo(c,g)carbazole, 7H-															
5385-75-1	Dibenzo[a,e]fluoranthene															
189-55-9	Dibenzo[a,i]pyrene															
96-12-8	Dibromo-3-chloropropane, 1,2-															
764-41-0	Dichloro-2-butene, 1,4-															
1476-11-5	Dichloro-2-butene, cis-1,4-															
106-46-7	Dichlorobenzene(p), 1,4-															
25321-22-6	Dichlorobenzenes															
91-94-1	Dichlorobenzidene, 3,3-															
75-71-8	Dichlorodifluoromethane (CFC-12)															
75-35-4	Dichloroethylene (1,1-) (Vinylidene chloride)															
156-60-5	Dichloroethylene, trans-1,2-															
542-75-6	Dichloropropene, 1,3-															
78-88-6	Dichloropropene, 2,3-															
62-73-7	Dichlorvos															
77-73-6	Dicyclopentadiene															
60-57-1	Dieldrin															
0-02-4	Diesel exhaust particulate															
111-42-2	Diethanolamine															
112-34-5	Diethylene Glycol Monobutyl Ether															
111-90-0	Diethylene Glycol Monoethyl Ether															
75-37-6	Difluoroethane, 1,1-															
108-20-3	Diisopropyl Ether															

60-11-7 Dimethyl aminoazobenzene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U17		STRU74		STRU20		STRU75				STRU23		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	
68-12-2	Dimethyl formamide														
108-01-0	Dimethylamino ethanol, 2-														
57-97-6	Dimethylbenz[a]anthracene, 7,12-														
57-14-7	Dimethylhydrazine, 1,1-														
42397-64-8	Dinitropyrene, 1,6- (BaP)														
42397-65-9	Dinitropyrene, 1,8- (BaP)														
121-14-2	Dinitrotoluene, 2,4-														
123-91-1	Dioxane, 1,4- (1,4-Diethylene dioxide)														
122-66-7	Diphenylhydrazine, 1,2-														
106-89-8	Epichlorohydrin (l-Chloro-2,3-epoxypropane														
106-88-7	Epoxybutane, 1,2-														
110-80-5	Ethoxyethanol, 2- (ethylene glycol monoeth														
141-78-6	Ethyl acetate														
140-88-5	Ethyl Acrylate														
100-41-4	Ethyl benzene														
51-79-6	Ethyl carbamate (Urethane)														
75-00-3	Ethyl chloride (Chloroethane)														
97-63-2	Ethyl Methacrylate														
106-93-4	Ethylene dibromide (Dibromoethane)														
107-06-2	Ethylene dichloride (1,2-Dichloroethane)														
107-21-1	Ethylene glycol														
75-21-8	Ethylene oxide														
96-45-7	Ethylene thiourea														
75-34-3	Ethylidene dichloride (1,1-Dichloroethane)														
206-44-0	Fluoranthene														
FLUORIDES	Fluorides (except hydrogen fluoride)														
50-00-0	Formaldehyde														
64-18-6	Formic Acid														
111-30-8	Glutaraldehyde														
0-01-2	Glycol ethers														
76-44-8	Heptachlor														
1024-57-3	Heptachlor epoxide														
35822-46-9	Heptachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8-														
00-08-5	Heptachlorodibenzodioxin, All Isomers														
67562-39-4	Heptachlorodibenzofuran, 1,2,3,4,6,7,8-														
55673-89-7	Heptachlorodibenzofuran, 1,2,3,4,7,8,9-														
00-08-4	Heptachlorodibenzofuran, All Isomers														
142-82-5	Heptane, N														
118-74-1	Hexachlorobenzene														

87-68-3 Hexachlorobutadiene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U17		STRU74		STRU20		STRU75				STRU23		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	
608-73-1	Hexachlorocyclohexane (technical grade)														
319-84-6	Hexachlorocyclohexane, alpha-														
319-85-7	Hexachlorocyclohexane, beta-1,2,3,4,5,6-														
77-47-4	Hexachlorocyclopentadiene														
39227-28-6	Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-														
57653-85-7	Hexachlorodibenzo-p-dioxin, 1,2,3,6,7,8-														
19408-74-3	Hexachlorodibenzo-p-dioxin, 1,2,3,7,8,9-														
00-08-3	Hexachlorodibenzodioxins, All Isomers														
70648-26-9	Hexachlorodibenzofuran, 1,2,3,4,7,8-														
57117-44-9	Hexachlorodibenzofuran, 1,2,3,6,7,8-														
72918-21-9	Hexachlorodibenzofuran, 1,2,3,7,8,9-														
60851-34-5	Hexachlorodibenzofuran, 2,3,4,6,7,8-														
00-08-2	Hexachlorodibenzofurans, All Isomers														
67-72-1	Hexachloroethane														
822-06-0	Hexamethylene-1,6-diisocyanate														
110-54-3	Hexane														
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl-1-hexanol)														
591-78-6	Hexanone-2														
302-01-2	Hydrazine														
10034-93-2	Hydrazine sulfate														
7647-01-0	Hydrochloric acid (hydrogen chloride)														
74-90-8	Hydrogen cyanide														
7664-39-3	Hydrogen fluoride (Hydrofluoric acid)														
7783-07-5	Hydrogen selenide														
7783-06-4	Hydrogen sulfide														
193-39-5	Indeno(1,2,3-cd)pyrene														
5888-33-5	Isobornyl acrylate														
78-59-1	Isophorone														
67-63-0	Isopropyl alcohol														
7439-92-1	Lead														
7758-97-6	Lead Chromate														
LEAD-COMPS	Lead Compounds														
58-89-9	Lindane (all isomers)														
108-31-6	Maleic anhydride														
7439-96-5	Manganese														
MANGANESE-COMP	Manganese Compounds														
7439-97-6	Mercury (elemental)														
MERCURY-COMPS	Mercury Compounds														
126-98-7	Methacrylonitrile														

67-56-1 Methanol

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U17		STRU74		STRU20		STRU75				STRU23		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	
109-86-4	Methoxyethanol, 2- (ethylene glycol monom														
96-33-3	Methyl acrylate														
110-49-6	Methyl Cellosolve Acetate														
74-87-3	Methyl chloride (Chloromethane)														
71-55-6	Methyl chloroform (1,1,1-Trichloroethane)														
78-93-3	Methyl ethyl ketone (2-Butanone)														
60-34-4	Methyl Hydrazine														
108-10-1	Methyl isobutyl ketone (Hexone)														
624-83-9	Methyl isocyanate														
80-62-6	Methyl methacrylate														
1634-04-4	Methyl tert butyl ether														
56-49-5	Methylcholanthrene, 3-														
3697-24-3	Methylchrysene, 5-														
101-14-4	Methylene bis(2-chloroaniline), 4,4-														
74-95-3	Methylene Bromide														
75-09-2	Methylene chloride (Dichloromethane)														
101-68-8	Methylene diphenyl diisocyanate (MDI)														
101-77-9	Methylenedianiline, 4,4-														
90-94-8	Michler's ketone														
10595-95-6	N- Nitrosomethylethylamine														
924-16-3	N-Nitrosodi-n-butylamine														
621-64-7	N-Nitrosodi-n-propylamine														
55-18-5	N-Nitrosodiethylamine														
62-75-9	N-Nitrosodimethylamine														
86-30-6	N-Nitrosodiphenylamine														
59-89-2	N-Nitrosomorpholine														
100-75-4	N-Nitrosopiperidine														
111-84-2	N-Nonane														
64724-95-6	Naphtha, High Flash Aromatic (HFAN)														
91-20-3	Naphthalene														
193-09-9	Naphtho[2,3-e]pyrene														
7440-02-0	Nickel														
NICKEL-COMPS	Nickel Compounds														
1313-99-1	Nickel oxide														
0-02-5	Nickel refinery dust from the pyrometallurgic														
12035-72-2	Nickel sulfide (NI3S2)														
7697-37-2	Nitric acid														
139-13-9	Nitrilotriacetic acid														
18662-53-8	Nitrilotriacetic acid, trisodium salt monohydr														

602-87-9 Nitroacenaphthene, 5-

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U17		STRU74		STRU20		STRU75				STRU23		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	
88-74-4	Nitroaniline, 2-														
100-01-6	Nitroaniline, 4-														
98-95-3	Nitrobenzene														
7496-02-8	Nitrochrysene, 6-														
607-57-8	Nitrofluorene, 2-														
10102-44-0	Nitrogen dioxide (NO2)														
75-52-5	Nitromethane														
79-46-9	Nitropropane, 2-														
5522-43-0	Nitropyrene, 1-														
57835-92-4	Nitropyrene, 4-														
156-10-5	Nitrosodiphenylamine, p-														
3268-87-9	Octachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8,9-														
39001-02-0	Octachlorodibenzofuran, 1,2,3,4,6,7,8,9-														
10028-15-6	Ozone														
74472-37-0	PCB 114 (2,3,4,4,5 Pentachlorobiphenyl)														
31508-00-6	PCB 118 (2,3,4,4,5 Pentachlorobiphenyl)														
65510-44-3	PCB 123 (2,3,4,4,5 Pentachlorobiphenyl)														
57465-28-8	PCB 126 (3,3,4,4,5 Pentachlorobiphenyl)														
38380-0804	PCB 156 (2,3,3,4,4,5 Hexachlorobiphenyl)														
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexachlorobiphenyl)														
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexachlorobiphenyl)														
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexachlorobiphenyl)														
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Heptachlorobipheny														
32598-13-3	PCB 77 (3,3,4,4-Tetrachlorobiphenyl)														
70362-50-4	PCB 81 (3,4,4,5 Tetrachlorobiphenyl)														
32598-14-4	PCB105 (2,3,3,4,4 Pentachlorobiphenyl)														
40321-76-4	Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-														
00-08-1	Pentachlorodibenzodioxins, All Isomers														
57117-41-6	Pentachlorodibenzofuran, 1,2,3,7,8-														
57117-31-4	Pentachlorodibenzofuran, 2,3,4,7,8-														
00-09-0	Pentachlorodibenzofurans, All Isomers														
87-86-5	Pentachlorophenol														
109-66-0	Pentane, n-														
ALIPHATIC-C5-C8	Petroleum Hydrocarbons, Aliphatic Low (C5														
ALIPHATIC-C9-C18	Petroleum Hydrocarbons, Aliphatic Medium														
AROMATIC-C6-C8	Petroleum Hydrocarbons, Aromatic Low (C6														
AROMATIC-C9-C16	Petroleum Hydrocarbons, Aromatic Medium														
85-01-8	Phenanthrene														
108-95-2	Phenol														

75-44-5 Phosgene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U17		STRU74		STRU20		STRU75				STRU23		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	
7803-51-2	Phosphine														
7664-38-2	Phosphoric acid														
85-44-9	Phthalic anhydride														
59536-65-1	Polybrominated Biphenyls														
1336-36-3	Polychlorinated biphenyls (Aroclors unspeci														
00-08-0	Polychlorinated Dibenzo-P-Dioxins And Fur														
00-05-0	Polychlorinated Dibenzodioxins, Total														
00-05-1	Polychlorinated Dibenzofurans, Total														
130498-29-2	Polycyclic Aromatic Hydrocarbons (PAH)														
00-01-7	Polycyclic Organic Matter (POM)														
9016-87-9	Polymeric diphenylmethane diisocyanate														
7758-01-2	Potassium bromate														
1120-71-4	Propane sultone, 1,3-														
57-57-8	Propiolactone, beta-														
123-38-6	Propionaldehyde														
115-07-1	Propylene														
78-87-5	Propylene dichloride (1,2-Dichloropropane)														
107-98-2	Propylene Glycol Monomethyl Ether														
75-56-9	Propylene oxide														
930-55-2	Pyrrolidine, 1-Nitroso-														
7782-49-2	Selenium														
0-01-9	Selenium Compounds														
7631-86-9	Silica (crystalline, respirable, PM4)														
1310-73-2	Sodium hydroxide														
10588-01-9	Sodium Dichromate														
7789-06-2	Strontium chromate														
100-42-5	Styrene														
96-09-3	Styrene oxide														
14808-79-8	Sulfates														
126-33-0	Sulfolane														
7446-09-5	Sulfur dioxide														
7664-93-9	Sulfuric acid (aerosol forms only)														
8014-95-7	Sulfuric Acid mixture w. sulfur trioxide (oleu														
00-09-1	TCDD Eqivalents, 2,3,7,8-														
540-88-5	Tert-Butyl Acetate														
1746-01-6	Tetrachlorodibenzo-p-dioxin, 2,3,7,8-														
00-08-8	Tetrachlorodibenzodioxins, All Isomers														
51207-31-9	Tetrachlorodibenzofuran, 2,3,7,8-														
00-08-6	Tetrachlorodibenzofurans, All Isomers														

630-20-6 Tetrachloroethane, 1,1,1,2-

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U17		STRU74		STRU20		STRU75				STRU23		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
79-34-5	Tetrachloroethane, 1,1,2,2-															
127-18-4	Tetrachloroethylene (Perchloroethylene)															
811-97-2	Tetrafluoroethane, 1,1,1,2-															
109-99-9	Tetrahydrofuran															
62-55-5	Thioacetamide															
62-56-6	Thiourea															
108-88-3	Toluene															
584-84-9	Toluene-2,4-diisocyanate															
91-08-7	Toluene-2,6-diisocyanate															
95-80-7	Toluene diamine, 2,4-															
26471-62-5	Toluenediisocyanate (mixed isomers)															
95-53-4	Toluidine, o- (Methylaniline, 2-)															
8001-35-2	Toxaphene (chlorinated camphene)															
10061-02-6	trans-1,3-Dichloropropene															
120-82-1	Trichlorobenzene, 1,2,4-															
79-00-5	Trichloroethane, 1,1,2-															
79-01-6	Trichloroethylene (TCE)															
75-69-4	Trichlorofluoromethane (CFC-11)															
88-06-2	Trichlorophenol, 2,4,6-															
96-18-4	Trichloropropane, 1,2,3-															
96-19-5	Trichloropropene, 1,2,3-															
76-13-1	Trichlorotrifluoroethane, 1,1,2- (CFC-13)															
121-44-8	Triethylamine															
420-46-2	Trifluoroethane, 1,1,1-															
526-73-8	Trimethylbenzene, 1,2,3-															
95-63-6	Trimethylbenzene, 1,2,4-															
108-67-8	Trimethylbenzene, 1,3,5-															
URANIUM-SOLUBLE	Uranium (Soluble Salts)															
7440-61-1	Uranium, Insoluble Compounds															
7440-62-2	Vanadium and Compounds															
1314-62-1	Vanadium Pentoxide, (V2O5)															
108-05-4	Vinyl acetate															
593-60-2	Vinyl bromide															
75-01-4	Vinyl chloride															
1330-20-7	Xylenes															
108-38-3	Xylenes, m-															
95-47-6	Xylenes, o-															
106-42-3	Xylenes, p-															
13530-65-9	Zinc chromate															

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U24		STRU25		STRU26		STRU30		STRU31		STRU32		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
202-94-8	11H-Benz[b,c]aceanthrylene															
202-98-2	4H-Cyclopenta[d,e,f]chrysene															
75-07-0	Acetaldehyde															
60-35-5	Acetamide															
67-64-1	Acetone															
75-86-5	Acetone Cyanohydrin															
75-05-8	Acetonitrile															
53-96-3	Acetylaminofluorene, 2-															
107-02-8	Acrolein															
79-06-1	Acrylamide															
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-nitro-2-furyl)-															
79-10-7	Acrylic acid															
107-13-1	Acrylonitrile															
111-69-3	Adiponitrile															
ALDEHYDES	Aldehydes															
309-00-2	Aldrin															
ALIPHATIC-MID	Aliphatic Hydrocarbon Streams (Midrange)															
107-05-1	Allyl chloride															
7429-90-5	Aluminum															
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazol, 2-															
6109-97-3	Amino-9-ethylcarbazolehydrochloride, 3-															
117-79-3	Aminoanthraquinone, 2-															
7664-41-7	Ammonia															
62-53-3	Aniline															
191-26-4	Anthanthrene															
7440-36-0	Antimony															
ANTIMONY-COMPS	Antimony Compounds															
1309-64-4	Antimony trioxide															
140-57-8	Aramite															
7440-38-2	Arsenic															
ARSENIC-COMPS	Arsenic Compounds															
1327-53-3	Arsenic Trioxide															
7784-42-1	Arsine															
1332-21-4	Asbestos (units in fibers)															
1332-21-4-LAA	Asbestos, Libby Amphibole (units in fibers)															
123-77-3	Azodicarbonamide															
10294-40-3	Barium Chromate															
199-54-2	Benz[e]aceanthrylene															
202-33-5	Benz[j]aceanthrylene															

211-91-6 Benz[l]aceanthrylene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U24		STRU25		STRU26		STRU30		STRU31		STRU32		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
71-43-2	Benzene															
92-87-5	Benzidine															
205-82-3	Benzo(j)fluoranthene															
207-08-9	Benzo(k)fluoranthene															
56-55-3	Benzo[a]anthracene															
50-32-8	Benzo[a]pyrene															
205-99-2	Benzo[b]fluoranthene															
205-12-9	Benzo[c]fluorene															
191-24-2	Benzo[g,h,i]perylene															
65-85-0	Benzoic Acid															
100-44-7	Benzyl chloride															
7440-41-7	Beryllium															
BERYLLIUM-COMPS	Beryllium Compounds															
13510-49-1	Beryllium sulfate															
111-44-4	Bis(2-chloroethyl)ether															
117-81-7	Bis(2-ethylhexyl)phthalate (DEHP)															
542-88-1	Bis(chloromethyl)ether															
7440-42-8	Boron And Borates Only															
10294-34-5	Boron Trichloride															
7637-07-2	Boron Trifluoride															
108-86-1	Bromobenzene															
74-97-5	Bromochloromethane															
75-27-4	Bromodichloromethane															
75-25-2	Bromoform															
74-83-9	Bromomethane															
106-94-5	Bromopropane, 1-															
106-99-0	Butadiene, 1,3-															
78-92-2	Butyl alcohol, sec-															
111-76-2	Butyl Cellosolve (ethylene glycol monobutyl															
25013-16-5	Butylated hydroxyanisole															
3068-88-0	Butyrolactone, beta-															
7440-43-9	Cadmium															
CADMIUM-COMPS	Cadmium Compounds															
13765-19-0	Calcium Chromate															
105-60-2	Caprolactum															
75-15-0	Carbon disulfide															
630-08-0	Carbon Monoxide															
56-23-5	Carbon tetrachloride															
463-58-1	Carbonyl sulfide															

111-15-9 Cellosolve Acetate (ethylene glycol monoet

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U24		STRU25		STRU26		STRU30		STRU31		STRU32		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
1306-38-3	Cerium Oxide and Cerium Compounds															
12789-03-6	Chlordane or (57-74-9)															
115-28-6	Chlorendic acid															
108171-26-2	Chlorinated Paraffins (C12, 60% Chlorine)															
7782-50-5	Chlorine															
10049-04-4	Chlorine Oxide (CLO2)															
75-68-3	Chloro-1,1-difluoroethane, 1- (HCFC-142b)															
563-47-3	Chloro-2-methylpropene, 3-															
95-83-0	Chloro-o-phenylenediamine, 4-															
95-69-2	Chloro-o-toluidine, p-															
532-27-4	Chloroacetophenone, 2-															
108-90-7	Chlorobenzene															
98-56-6	Chlorobenzotrifluoride, 4-															
75-45-6	Chlorodifluoromethane (HCFC-22)															
67-66-3	Chloroform															
107-30-2	Chloromethyl Methyl Ether															
88-73-3	Chloronitrobenzene, o-															
100-00-5	Chloronitrobenzene, p-															
76-06-2	Chloropicrin															
126-99-8	Chloroprene															
1333-82-0	Chromic acid mists and dissolved Cr(VI) ae															
7440-47-3	Chromium															
18540-29-9	Chromium (Hexavalent)															
18540-29-9-pm	Chromium (Hexavalent) - Particulate															
CHROM-COMPS	Chromium Compounds															
16065-83-1	Chromium(III) Compounds															
218-01-9	Chrysene (Benzo(a)phenanthrene)															
87-29-6	Cinnamyl anthranilate															
10061-01-5	cis-1,3-Dichloropropene															
8007-45-2	Coal Tar															
7440-48-4	Cobalt															
0-00-7	Coke Oven Emissions															
7440-50-8	Copper															
COPPER-COMPS	Copper Compounds															
120-71-8	Cresidine, p-															
108-39-4	Cresol, m-															
95-48-7	Cresol, o-															
106-44-5	Cresol, p-															
1319-77-3	Cresols/Cresylic acid (isomers and mixture)															

98-82-8 Cumene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U24		STRU25		STRU26		STRU30		STRU31		STRU32		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
135-20-6	Cupferron															
57-12-5	Cyanide (Cyanide ion, Inorganic cyanides, I															
CYANIDE-COMPS	Cyanide Compounds															
110-82-7	Cyclohexane															
108-94-1	Cyclohexanone															
27208-37-3	Cyclopenta[c,d]pyrene															
50-29-3	DDT															
615-05-4	Diaminoanisole, 2,4-															
101-80-4	Diaminodiphenyl ether, 4,4-															
103-33-3	Diazene, Diphenyl															
226-36-8	Dibenz(a,h)acridine															
224-42-0	Dibenz(a,j)acridine															
53-70-3	Dibenz[a,h]anthracene															
192-65-4	Dibenzo(a,e)pyrene															
189-64-0	Dibenzo(a,h)pyrene															
191-30-0	Dibenzo(a,l)pyrene															
194-59-2	Dibenzo(c,g)carbazole, 7H-															
5385-75-1	Dibenzo[a,e]fluoranthene															
189-55-9	Dibenzo[a,i]pyrene															
96-12-8	Dibromo-3-chloropropane, 1,2-															
764-41-0	Dichloro-2-butene, 1,4-															
1476-11-5	Dichloro-2-butene, cis-1,4-															
106-46-7	Dichlorobenzene(p), 1,4-															
25321-22-6	Dichlorobenzenes															
91-94-1	Dichlorobenzidene, 3,3-															
75-71-8	Dichlorodifluoromethane (CFC-12)															
75-35-4	Dichloroethylene (1,1-) (Vinylidene chloride)															
156-60-5	Dichloroethylene, trans-1,2-															
542-75-6	Dichloropropene, 1,3-															
78-88-6	Dichloropropene, 2,3-															
62-73-7	Dichlorvos															
77-73-6	Dicyclopentadiene															
60-57-1	Dieldrin															
0-02-4	Diesel exhaust particulate															
111-42-2	Diethanolamine															
112-34-5	Diethylene Glycol Monobutyl Ether															
111-90-0	Diethylene Glycol Monoethyl Ether															
75-37-6	Difluoroethane, 1,1-															
108-20-3	Diisopropyl Ether															

60-11-7 Dimethyl aminoazobenzene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U24		STRU25		STRU26		STRU30		STRU31		STRU32		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
68-12-2	Dimethyl formamide															
108-01-0	Dimethylamino ethanol, 2-															
57-97-6	Dimethylbenz[a]anthracene, 7,12-															
57-14-7	Dimethylhydrazine, 1,1-															
42397-64-8	Dinitropyrene, 1,6- (BaP)															
42397-65-9	Dinitropyrene, 1,8- (BaP)															
121-14-2	Dinitrotoluene, 2,4-															
123-91-1	Dioxane, 1,4- (1,4-Diethylene dioxide)															
122-66-7	Diphenylhydrazine, 1,2-															
106-89-8	Epichlorohydrin (l-Chloro-2,3-epoxypropane															
106-88-7	Epoxybutane, 1,2-															
110-80-5	Ethoxyethanol, 2- (ethylene glycol monoeth															
141-78-6	Ethyl acetate															
140-88-5	Ethyl Acrylate															
100-41-4	Ethyl benzene															
51-79-6	Ethyl carbamate (Urethane)															
75-00-3	Ethyl chloride (Chloroethane)															
97-63-2	Ethyl Methacrylate															
106-93-4	Ethylene dibromide (Dibromoethane)															
107-06-2	Ethylene dichloride (1,2-Dichloroethane)															
107-21-1	Ethylene glycol															
75-21-8	Ethylene oxide															
96-45-7	Ethylene thiourea															
75-34-3	Ethylidene dichloride (1,1-Dichloroethane)															
206-44-0	Fluoranthene															
FLUORIDES	Fluorides (except hydrogen fluoride)															
50-00-0	Formaldehyde															
64-18-6	Formic Acid															
111-30-8	Glutaraldehyde															
0-01-2	Glycol ethers															
76-44-8	Heptachlor															
1024-57-3	Heptachlor epoxide															
35822-46-9	Heptachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8-															
00-08-5	Heptachlorodibenzodioxin, All Isomers															
67562-39-4	Heptachlorodibenzofuran, 1,2,3,4,6,7,8-															
55673-89-7	Heptachlorodibenzofuran, 1,2,3,4,7,8,9-															
00-08-4	Heptachlorodibenzofuran, All Isomers															
142-82-5	Heptane, N															
118-74-1	Hexachlorobenzene															

87-68-3 Hexachlorobutadiene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U24		STRU25		STRU26		STRU30		STRU31		STRU32		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
608-73-1	Hexachlorocyclohexane (technical grade)															
319-84-6	Hexachlorocyclohexane, alpha-															
319-85-7	Hexachlorocyclohexane, beta-1,2,3,4,5,6-															
77-47-4	Hexachlorocyclopentadiene															
39227-28-6	Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-															
57653-85-7	Hexachlorodibenzo-p-dioxin, 1,2,3,6,7,8-															
19408-74-3	Hexachlorodibenzo-p-dioxin, 1,2,3,7,8,9-															
00-08-3	Hexachlorodibenzodioxins, All Isomers															
70648-26-9	Hexachlorodibenzofuran, 1,2,3,4,7,8-															
57117-44-9	Hexachlorodibenzofuran, 1,2,3,6,7,8-															
72918-21-9	Hexachlorodibenzofuran, 1,2,3,7,8,9-															
60851-34-5	Hexachlorodibenzofuran, 2,3,4,6,7,8-															
00-08-2	Hexachlorodibenzofurans, All Isomers															
67-72-1	Hexachloroethane															
822-06-0	Hexamethylene-1,6-diisocyanate															
110-54-3	Hexane															
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl-1-hexanol)															
591-78-6	Hexanone-2															
302-01-2	Hydrazine															
10034-93-2	Hydrazine sulfate															
7647-01-0	Hydrochloric acid (hydrogen chloride)															
74-90-8	Hydrogen cyanide															
7664-39-3	Hydrogen fluoride (Hydrofluoric acid)															
7783-07-5	Hydrogen selenide															
7783-06-4	Hydrogen sulfide															
193-39-5	Indeno(1,2,3-cd)pyrene															
5888-33-5	Isobornyl acrylate															
78-59-1	Isophorone															
67-63-0	Isopropyl alcohol															
7439-92-1	Lead															
7758-97-6	Lead Chromate															
LEAD-COMPS	Lead Compounds															
58-89-9	Lindane (all isomers)															
108-31-6	Maleic anhydride															
7439-96-5	Manganese															
MANGANESE-COMP	Manganese Compounds															
7439-97-6	Mercury (elemental)															
MERCURY-COMPS	Mercury Compounds															
126-98-7	Methacrylonitrile															

67-56-1 Methanol

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U24		STRU25		STRU26		STRU30		STRU31		STRU32		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
109-86-4	Methoxyethanol, 2- (ethylene glycol monom															
96-33-3	Methyl acrylate															
110-49-6	Methyl Cellosolve Acetate															
74-87-3	Methyl chloride (Chloromethane)															
71-55-6	Methyl chloroform (1,1,1-Trichloroethane)															
78-93-3	Methyl ethyl ketone (2-Butanone)															
60-34-4	Methyl Hydrazine															
108-10-1	Methyl isobutyl ketone (Hexone)															
624-83-9	Methyl isocyanate															
80-62-6	Methyl methacrylate															
1634-04-4	Methyl tert butyl ether															
56-49-5	Methylcholanthrene, 3-															
3697-24-3	Methylchrysene, 5-															
101-14-4	Methylene bis(2-chloroaniline), 4,4-															
74-95-3	Methylene Bromide															
75-09-2	Methylene chloride (Dichloromethane)															
101-68-8	Methylene diphenyl diisocyanate (MDI)															
101-77-9	Methylenedianiline, 4,4-															
90-94-8	Michler's ketone															
10595-95-6	N- Nitrosomethylethylamine															
924-16-3	N-Nitrosodi-n-butylamine															
621-64-7	N-Nitrosodi-n-propylamine															
55-18-5	N-Nitrosodiethylamine															
62-75-9	N-Nitrosodimethylamine															
86-30-6	N-Nitrosodiphenylamine															
59-89-2	N-Nitrosomorpholine															
100-75-4	N-Nitrosopiperidine															
111-84-2	N-Nonane															
64724-95-6	Naphtha, High Flash Aromatic (HFAN)															
91-20-3	Naphthalene															
193-09-9	Naphtho[2,3-e]pyrene															
7440-02-0	Nickel															
NICKEL-COMPS	Nickel Compounds															
1313-99-1	Nickel oxide															
0-02-5	Nickel refinery dust from the pyrometallurgic															
12035-72-2	Nickel sulfide (NI3S2)															
7697-37-2	Nitric acid															
139-13-9	Nitrilotriacetic acid															
18662-53-8	Nitrilotriacetic acid, trisodium salt monohydr															

602-87-9 Nitroacenaphthene, 5-

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U24		STRU25		STRU26		STRU30		STRU31		STRU32		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
88-74-4	Nitroaniline, 2-															
100-01-6	Nitroaniline, 4-															
98-95-3	Nitrobenzene															
7496-02-8	Nitrochrysene, 6-															
607-57-8	Nitrofluorene, 2-															
10102-44-0	Nitrogen dioxide (NO2)															
75-52-5	Nitromethane															
79-46-9	Nitropropane, 2-															
5522-43-0	Nitropyrene, 1-															
57835-92-4	Nitropyrene, 4-															
156-10-5	Nitrosodiphenylamine, p-															
3268-87-9	Octachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8,9-															
39001-02-0	Octachlorodibenzofuran, 1,2,3,4,6,7,8,9-															
10028-15-6	Ozone															
74472-37-0	PCB 114 (2,3,4,4,5 Pentachlorobiphenyl)															
31508-00-6	PCB 118 (2,3,4,4,5 Pentachlorobiphenyl)															
65510-44-3	PCB 123 (2,3,4,4,5 Pentachlorobiphenyl)															
57465-28-8	PCB 126 (3,3,4,4,5 Pentachlorobiphenyl)															
38380-0804	PCB 156 (2,3,3,4,4,5 Hexachlorobiphenyl)															
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexachlorobiphenyl)															
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexachlorobiphenyl)															
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexachlorobiphenyl)															
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Heptachlorobipheny															
32598-13-3	PCB 77 (3,3,4,4-Tetrachlorobiphenyl)															
70362-50-4	PCB 81 (3,4,4,5 Tetrachlorobiphenyl)															
32598-14-4	PCB105 (2,3,3,4,4 Pentachlorobiphenyl)															
40321-76-4	Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-															
00-08-1	Pentachlorodibenzodioxins, All Isomers															
57117-41-6	Pentachlorodibenzofuran, 1,2,3,7,8-															
57117-31-4	Pentachlorodibenzofuran, 2,3,4,7,8-															
00-09-0	Pentachlorodibenzofurans, All Isomers															
87-86-5	Pentachlorophenol															
109-66-0	Pentane, n-															
ALIPHATIC-C5-C8	Petroleum Hydrocarbons, Aliphatic Low (C5															
ALIPHATIC-C9-C18	Petroleum Hydrocarbons, Aliphatic Medium															
AROMATIC-C6-C8	Petroleum Hydrocarbons, Aromatic Low (C6															
AROMATIC-C9-C16	Petroleum Hydrocarbons, Aromatic Medium															
85-01-8	Phenanthrene															
108-95-2	Phenol															

75-44-5 Phosgene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U24		STRU25		STRU26		STRU30		STRU31		STRU32		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
7803-51-2	Phosphine															
7664-38-2	Phosphoric acid															
85-44-9	Phthalic anhydride															
59536-65-1	Polybrominated Biphenyls															
1336-36-3	Polychlorinated biphenyls (Aroclors unspeci															
00-08-0	Polychlorinated Dibenzo-P-Dioxins And Fur															
00-05-0	Polychlorinated Dibenzodioxins, Total															
00-05-1	Polychlorinated Dibenzofurans, Total															
130498-29-2	Polycyclic Aromatic Hydrocarbons (PAH)															
00-01-7	Polycyclic Organic Matter (POM)															
9016-87-9	Polymeric diphenylmethane diisocyanate															
7758-01-2	Potassium bromate															
1120-71-4	Propane sultone, 1,3-															
57-57-8	Propiolactone, beta-															
123-38-6	Propionaldehyde															
115-07-1	Propylene															
78-87-5	Propylene dichloride (1,2-Dichloropropane)															
107-98-2	Propylene Glycol Monomethyl Ether															
75-56-9	Propylene oxide															
930-55-2	Pyrrolidine, 1-Nitroso-															
7782-49-2	Selenium															
0-01-9	Selenium Compounds															
7631-86-9	Silica (crystalline, respirable, PM4)															
1310-73-2	Sodium hydroxide															
10588-01-9	Sodium Dichromate															
7789-06-2	Strontium chromate															
100-42-5	Styrene															
96-09-3	Styrene oxide															
14808-79-8	Sulfates															
126-33-0	Sulfolane															
7446-09-5	Sulfur dioxide															
7664-93-9	Sulfuric acid (aerosol forms only)															
8014-95-7	Sulfuric Acid mixture w. sulfur trioxide (oleu															
00-09-1	TCDD Eqivalents, 2,3,7,8-															
540-88-5	Tert-Butyl Acetate															
1746-01-6	Tetrachlorodibenzo-p-dioxin, 2,3,7,8-															
00-08-8	Tetrachlorodibenzodioxins, All Isomers															
51207-31-9	Tetrachlorodibenzofuran, 2,3,7,8-															
00-08-6	Tetrachlorodibenzofurans, All Isomers															

630-20-6 Tetrachloroethane, 1,1,1,2-

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U24		STRU25		STRU26		STRU30		STRU31		STRU32		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
79-34-5	Tetrachloroethane, 1,1,2,2-															
127-18-4	Tetrachloroethylene (Perchloroethylene)															
811-97-2	Tetrafluoroethane, 1,1,1,2-															
109-99-9	Tetrahydrofuran															
62-55-5	Thioacetamide															
62-56-6	Thiourea															
108-88-3	Toluene															
584-84-9	Toluene-2,4-diisocyanate															
91-08-7	Toluene-2,6-diisocyanate															
95-80-7	Toluene diamine, 2,4-															
26471-62-5	Toluenediisocyanate (mixed isomers)															
95-53-4	Toluidine, o- (Methylaniline, 2-)															
8001-35-2	Toxaphene (chlorinated camphene)															
10061-02-6	trans-1,3-Dichloropropene															
120-82-1	Trichlorobenzene, 1,2,4-															
79-00-5	Trichloroethane, 1,1,2-															
79-01-6	Trichloroethylene (TCE)															
75-69-4	Trichlorofluoromethane (CFC-11)															
88-06-2	Trichlorophenol, 2,4,6-															
96-18-4	Trichloropropane, 1,2,3-															
96-19-5	Trichloropropene, 1,2,3-															
76-13-1	Trichlorotrifluoroethane, 1,1,2- (CFC-13)															
121-44-8	Triethylamine															
420-46-2	Trifluoroethane, 1,1,1-															
526-73-8	Trimethylbenzene, 1,2,3-															
95-63-6	Trimethylbenzene, 1,2,4-															
108-67-8	Trimethylbenzene, 1,3,5-															
URANIUM-SOLUBLE	Uranium (Soluble Salts)															
7440-61-1	Uranium, Insoluble Compounds															
7440-62-2	Vanadium and Compounds															
1314-62-1	Vanadium Pentoxide, (V2O5)															
108-05-4	Vinyl acetate															
593-60-2	Vinyl bromide															
75-01-4	Vinyl chloride															
1330-20-7	Xylenes															
108-38-3	Xylenes, m-															
95-47-6	Xylenes, o-															
106-42-3	Xylenes, p-															
13530-65-9	Zinc chromate															

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U33		STRU34		STRU35		STRU41		STRU43		STRU44		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
202-94-8	11H-Benz[b,c]aceanthrylene															
202-98-2	4H-Cyclopenta[d,e,f]chrysene															
75-07-0	Acetaldehyde															
60-35-5	Acetamide															
67-64-1	Acetone								3.228E-05	0.00014139						
75-86-5	Acetone Cyanohydrin															
75-05-8	Acetonitrile															
53-96-3	Acetylaminofluorene, 2-															
107-02-8	Acrolein															
79-06-1	Acrylamide															
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-nitro-2-furyl)-															
79-10-7	Acrylic acid															
107-13-1	Acrylonitrile															
111-69-3	Adiponitrile															
ALDEHYDES	Aldehydes															
309-00-2	Aldrin															
ALIPHATIC-MID	Aliphatic Hydrocarbon Streams (Midrange)															
107-05-1	Allyl chloride															
7429-90-5	Aluminum															
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazol, 2-															
6109-97-3	Amino-9-ethylcarbazolehydrochloride, 3-															
117-79-3	Aminoanthraquinone, 2-															
7664-41-7	Ammonia															
62-53-3	Aniline															
191-26-4	Anthanthrene															
7440-36-0	Antimony															
ANTIMONY-COMPS	Antimony Compounds															
1309-64-4	Antimony trioxide															
140-57-8	Aramite															
7440-38-2	Arsenic										3.652E-07	1.5996E-06	8.14E-07	3.56E-06	8.14E-07	
ARSENIC-COMPS	Arsenic Compounds															
1327-53-3	Arsenic Trioxide															
7784-42-1	Arsine															
1332-21-4	Asbestos (units in fibers)															
1332-21-4-LAA	Asbestos, Libby Amphibole (units in fibers)															
123-77-3	Azodicarbonamide															
10294-40-3	Barium Chromate															
199-54-2	Benz[e]aceanthrylene															
202-33-5	Benz[j]aceanthrylene															

211-91-6 Benz[l]aceanthrylene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U33		STRU34		STRU35		STRU41		STRU43		STRU44		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	
71-43-2	Benzene							1.9785E-06	8.6657E-06	3.8346E-06	1.6795E-05	8.55E-06	3.74E-05	8.55E-06	
92-87-5	Benzidine														
205-82-3	Benzo(j)fluoranthene														
207-08-9	Benzo(k)fluoranthene														
56-55-3	Benzo[a]anthracene														
50-32-8	Benzo[a]pyrene														
205-99-2	Benzo[b]fluoranthene														
205-12-9	Benzo[c]fluorene														
191-24-2	Benzo[g,h,i]perylene														
65-85-0	Benzoic Acid														
100-44-7	Benzyl chloride							1.2496E-05	5.4731E-05						
7440-41-7	Beryllium									2.1912E-08	9.5974E-08	4.88E-08	2.14E-07	4.88E-08	
BERYLLIUM-COMPS	Beryllium Compounds														
13510-49-1	Beryllium sulfate														
111-44-4	Bis(2-chloroethyl)ether														
117-81-7	Bis(2-ethylhexyl)phthalate (DEHP)														
542-88-1	Bis(chloromethyl)ether														
7440-42-8	Boron And Borates Only														
10294-34-5	Boron Trichloride														
7637-07-2	Boron Trifluoride														
108-86-1	Bromobenzene														
74-97-5	Bromochloromethane														
75-27-4	Bromodichloromethane							6.5081E-06	2.8506E-05						
75-25-2	Bromoform							2.4991E-05	0.00010946						
74-83-9	Bromomethane							3.6445E-06	1.5963E-05						
106-94-5	Bromopropane, 1-														
106-99-0	Butadiene, 1,3-							2.1347E-06	9.3498E-06						
78-92-2	Butyl alcohol, sec-														
111-76-2	Butyl Cellosolve (ethylene glycol monobutyl														
25013-16-5	Butylated hydroxyanisole														
3068-88-0	Butyrolactone, beta-														
7440-43-9	Cadmium									2.0086E-06	8.7976E-06	4.48E-06	1.96E-05	4.48E-06	
CADMIUM-COMPS	Cadmium Compounds														
13765-19-0	Calcium Chromate														
105-60-2	Caprolactum														
75-15-0	Carbon disulfide							3.1239E-06	1.3683E-05						
630-08-0	Carbon Monoxide									0.15338235	0.67181471	3.42E-01	1.50E+00	3.42E-01	
56-23-5	Carbon tetrachloride							5.9875E-06	2.6225E-05						
463-58-1	Carbonyl sulfide														

111-15-9 Cellosolve Acetate (ethylene glycol monoet

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U33		STRU34		STRU35		STRU41		STRU43		STRU44		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
1306-38-3	Cerium Oxide and Cerium Compounds															
12789-03-6	Chlordane or (57-74-9)															
115-28-6	Chlorendic acid															
108171-26-2	Chlorinated Paraffins (C12, 60% Chlorine)															
7782-50-5	Chlorine															
10049-04-4	Chlorine Oxide (CLO2)															
75-68-3	Chloro-1,1-difluoroethane, 1- (HCFC-142b)															
563-47-3	Chloro-2-methylpropene, 3-															
95-83-0	Chloro-o-phenylenediamine, 4-															
95-69-2	Chloro-o-toluidine, p-															
532-27-4	Chloroacetophenone, 2-															
108-90-7	Chlorobenzene								4.4255E-06	1.9384E-05						
98-56-6	Chlorobenzotrifluoride, 4-															
75-45-6	Chlorodifluoromethane (HCFC-22)															
67-66-3	Chloroform								2.369E-06	1.0376E-05						
107-30-2	Chloromethyl Methyl Ether															
88-73-3	Chloronitrobenzene, o-															
100-00-5	Chloronitrobenzene, p-															
76-06-2	Chloropicrin															
126-99-8	Chloroprene															
1333-82-0	Chromic acid mists and dissolved Cr(VI) ae															
7440-47-3	Chromium															
18540-29-9	Chromium (Hexavalent)										2.5564E-07	1.1197E-06	5.70E-07	2.50E-06	5.70E-07	
18540-29-9-pm	Chromium (Hexavalent) - Particulate															
CHROM-COMPS	Chromium Compounds															
16065-83-1	Chromium(III) Compounds										2.3007E-06	1.0077E-05	5.13E-06	2.25E-05	5.13E-06	
218-01-9	Chrysene (Benzo(a)phenanthrene)															
87-29-6	Cinnamyl anthranilate															
10061-01-5	cis-1,3-Dichloropropene								1.0934E-05	4.7889E-05						
8007-45-2	Coal Tar															
7440-48-4	Cobalt										1.5338E-07	6.7181E-07	3.42E-07	1.50E-06	3.42E-07	
0-00-7	Coke Oven Emissions															
7440-50-8	Copper															
COPPER-COMPS	Copper Compounds															
120-71-8	Cresidine, p-															
108-39-4	Cresol, m-															
95-48-7	Cresol, o-															
106-44-5	Cresol, p-															
1319-77-3	Cresols/Cresylic acid (isomers and mixture)															

98-82-8 Cumene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U33		STRU34		STRU35		STRU41		STRU43		STRU44		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	
135-20-6	Cupferron														
57-12-5	Cyanide (Cyanide ion, Inorganic cyanides, I														
CYANIDE-COMPS	Cyanide Compounds														
110-82-7	Cyclohexane								8.3304E-06	3.6487E-05					
108-94-1	Cyclohexanone														
27208-37-3	Cyclopenta[c,d]pyrene														
50-29-3	DDT														
615-05-4	Diaminoanisole, 2,4-														
101-80-4	Diaminodiphenyl ether, 4,4-														
103-33-3	Diazene, Diphenyl														
226-36-8	Dibenz(a,h)acridine														
224-42-0	Dibenz(a,j)acridine														
53-70-3	Dibenz[a,h]anthracene														
192-65-4	Dibenzo(a,e)pyrene														
189-64-0	Dibenzo(a,h)pyrene														
191-30-0	Dibenzo(a,l)pyrene														
194-59-2	Dibenzo(c,g)carbazole, 7H-														
5385-75-1	Dibenzo[a,e]fluoranthene														
189-55-9	Dibenzo[a,i]pyrene														
96-12-8	Dibromo-3-chloropropane, 1,2-														
764-41-0	Dichloro-2-butene, 1,4-														
1476-11-5	Dichloro-2-butene, cis-1,4-														
106-46-7	Dichlorobenzene(p), 1,4-								1.4578E-05	6.3852E-05					
25321-22-6	Dichlorobenzenes										2.1912E-06	9.5974E-06	4.88E-06	2.14E-05	4.88E-06
91-94-1	Dichlorobenzidene, 3,3-														
75-71-8	Dichlorodifluoromethane (CFC-12)								3.4884E-05	0.00015279					
75-35-4	Dichloroethylene (1,1-) (Vinylidene chloride)								3.9049E-06	1.7103E-05					
156-60-5	Dichloroethylene, trans-1,2-								9.92E-04	0.00434425			3.11E-04	1.36E-03	3.11E-04
542-75-6	Dichloropropene, 1,3-														
78-88-6	Dichloropropene, 2,3-														
62-73-7	Dichlorvos														
77-73-6	Dicyclopentadiene														
60-57-1	Dieldrin														
0-02-4	Diesel exhaust particulate														
111-42-2	Diethanolamine														
112-34-5	Diethylene Glycol Monobutyl Ether														
111-90-0	Diethylene Glycol Monoethyl Ether														
75-37-6	Difluoroethane, 1,1-														
108-20-3	Diisopropyl Ether														

60-11-7 Dimethyl aminoazobenzene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U33		STRU34		STRU35		STRU41		STRU43		STRU44		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
68-12-2	Dimethyl formamide															
108-01-0	Dimethylamino ethanol, 2-															
57-97-6	Dimethylbenz[a]anthracene, 7,12-															
57-14-7	Dimethylhydrazine, 1,1-															
42397-64-8	Dinitropyrene, 1,6- (BaP)															
42397-65-9	Dinitropyrene, 1,8- (BaP)															
121-14-2	Dinitrotoluene, 2,4-															
123-91-1	Dioxane, 1,4- (1,4-Diethylene dioxide)															
122-66-7	Diphenylhydrazine, 1,2-															
106-89-8	Epichlorohydrin (l-Chloro-2,3-epoxypropane															
106-88-7	Epoxybutane, 1,2-															
110-80-5	Ethoxyethanol, 2- (ethylene glycol monoeth															
141-78-6	Ethyl acetate								3.3842E-06	1.4823E-05						
140-88-5	Ethyl Acrylate															
100-41-4	Ethyl benzene								1.0413E-05	4.5609E-05						
51-79-6	Ethyl carbamate (Urethane)															
75-00-3	Ethyl chloride (Chloroethane)								2.5512E-06	1.1174E-05						
97-63-2	Ethyl Methacrylate															
106-93-4	Ethylene dibromide (Dibromoethane)								3.6445E-06	1.5963E-05						
107-06-2	Ethylene dichloride (1,2-Dichloroethane)								3.9049E-06	1.7103E-05						
107-21-1	Ethylene glycol															
75-21-8	Ethylene oxide															
96-45-7	Ethylene thiourea															
75-34-3	Ethylidene dichloride (1,1-Dichloroethane)								2.4731E-05	0.00010832						
206-44-0	Fluoranthene															
FLUORIDES	Fluorides (except hydrogen fluoride)															
50-00-0	Formaldehyde										0.00013695	0.00059983	3.05E-04	1.34E-03	3.05E-04	
64-18-6	Formic Acid															
111-30-8	Glutaraldehyde															
0-01-2	Glycol ethers															
76-44-8	Heptachlor															
1024-57-3	Heptachlor epoxide															
35822-46-9	Heptachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8-															
00-08-5	Heptachlorodibenzodioxin, All Isomers															
67562-39-4	Heptachlorodibenzofuran, 1,2,3,4,6,7,8-															
55673-89-7	Heptachlorodibenzofuran, 1,2,3,4,7,8,9-															
00-08-4	Heptachlorodibenzofuran, All Isomers															
142-82-5	Heptane, N								3.9049E-06	1.7103E-05						
118-74-1	Hexachlorobenzene															

87-68-3	Hexachlorobutadiene	2.5772E-05	0.00011288

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U33		STRU34		STRU35		STRU41		STRU43		STRU44		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	
608-73-1	Hexachlorocyclohexane (technical grade)														
319-84-6	Hexachlorocyclohexane, alpha-														
319-85-7	Hexachlorocyclohexane, beta-1,2,3,4,5,6-														
77-47-4	Hexachlorocyclopentadiene														
39227-28-6	Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-														
57653-85-7	Hexachlorodibenzo-p-dioxin, 1,2,3,6,7,8-														
19408-74-3	Hexachlorodibenzo-p-dioxin, 1,2,3,7,8,9-														
00-08-3	Hexachlorodibenzodioxins, All Isomers														
70648-26-9	Hexachlorodibenzofuran, 1,2,3,4,7,8-														
57117-44-9	Hexachlorodibenzofuran, 1,2,3,6,7,8-														
72918-21-9	Hexachlorodibenzofuran, 1,2,3,7,8,9-														
60851-34-5	Hexachlorodibenzofuran, 2,3,4,6,7,8-														
00-08-2	Hexachlorodibenzofurans, All Isomers														
67-72-1	Hexachloroethane														
822-06-0	Hexamethylene-1,6-diisocyanate														
110-54-3	Hexane								3.3842E-06	1.4823E-05	0.00328676	0.01439603	7.32E-03	3.21E-02	7.32E-03
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl-1-hexanol)														
591-78-6	Hexanone-2								1.9785E-05	8.6657E-05					
302-01-2	Hydrazine														
10034-93-2	Hydrazine sulfate														
7647-01-0	Hydrochloric acid (hydrogen chloride)														
74-90-8	Hydrogen cyanide														
7664-39-3	Hydrogen fluoride (Hydrofluoric acid)														
7783-07-5	Hydrogen selenide														
7783-06-4	Hydrogen sulfide														
193-39-5	Indeno(1,2,3-cd)pyrene														
5888-33-5	Isobornyl acrylate						0.00226875	0.00993713							
78-59-1	Isophorone														
67-63-0	Isopropyl alcohol								1.3797E-05	6.0432E-05					
7439-92-1	Lead														
7758-97-6	Lead Chromate														
LEAD-COMPS	Lead Compounds														
58-89-9	Lindane (all isomers)														
108-31-6	Maleic anhydride														
7439-96-5	Manganese										6.9387E-07	3.0392E-06	2.03E-06	8.91E-06	2.03E-06
MANGANESE-COMP	Manganese Compounds														
7439-97-6	Mercury (elemental)										4.7475E-07	2.0794E-06	1.06E-06	4.63E-06	1.06E-06
MERCURY-COMPS	Mercury Compounds														
126-98-7	Methacrylonitrile														

67-56-1 Methanol

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U33		STRU34		STRU35		STRU41		STRU43		STRU44		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	
109-86-4	Methoxyethanol, 2- (ethylene glycol monom														
96-33-3	Methyl acrylate														
110-49-6	Methyl Cellosolve Acetate														
74-87-3	Methyl chloride (Chloromethane)								3.3842E-06	1.4823E-05					
71-55-6	Methyl chloroform (1,1,1-Trichloroethane)								0.00012313	0.00053933					
78-93-3	Methyl ethyl ketone (2-Butanone)								1.4318E-05	6.2712E-05					
60-34-4	Methyl Hydrazine														
108-10-1	Methyl isobutyl ketone (Hexone)								1.9785E-05	8.6657E-05					
624-83-9	Methyl isocyanate														
80-62-6	Methyl methacrylate														
1634-04-4	Methyl tert butyl ether								1.7442E-05	7.6395E-05					
56-49-5	Methylcholanthrene, 3-														
3697-24-3	Methylchrysene, 5-														
101-14-4	Methylene bis(2-chloroaniline), 4,4-														
74-95-3	Methylene Bromide														
75-09-2	Methylene chloride (Dichloromethane)								1.6921E-05	7.4114E-05					
101-68-8	Methylene diphenyl diisocyanate (MDI)														
101-77-9	Methylenedianiline, 4,4-														
90-94-8	Michler's ketone														
10595-95-6	N- Nitrosomethylethylamine														
924-16-3	N-Nitrosodi-n-butylamine														
621-64-7	N-Nitrosodi-n-propylamine														
55-18-5	N-Nitrosodiethylamine														
62-75-9	N-Nitrosodimethylamine														
86-30-6	N-Nitrosodiphenylamine														
59-89-2	N-Nitrosomorpholine														
100-75-4	N-Nitrosopiperidine														
111-84-2	N-Nonane														
64724-95-6	Naphtha, High Flash Aromatic (HFAN)														
91-20-3	Naphthalene								1.2756E-05	5.5871E-05	1.1138E-06	4.8787E-06	2.48E-06	1.09E-05	2.48E-06
193-09-9	Naphtho[2,3-e]pyrene														
7440-02-0	Nickel										3.8346E-06	1.6795E-05	8.55E-06	3.74E-05	8.55E-06
NICKEL-COMPS	Nickel Compounds														
1313-99-1	Nickel oxide														
0-02-5	Nickel refinery dust from the pyrometallurgic														
12035-72-2	Nickel sulfide (NI3S2)														
7697-37-2	Nitric acid														
139-13-9	Nitrilotriacetic acid														
18662-53-8	Nitrilotriacetic acid, trisodium salt monohydr														

602-87-9 Nitroacenaphthene, 5-

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U33		STRU34		STRU35		STRU41		STRU43		STRU44		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
88-74-4	Nitroaniline, 2-															
100-01-6	Nitroaniline, 4-															
98-95-3	Nitrobenzene															
7496-02-8	Nitrochrysene, 6-															
607-57-8	Nitrofluorene, 2-															
10102-44-0	Nitrogen dioxide (NO2)										0.18259804	0.79977941	4.07E-01	1.78E+00	4.07E-01	
75-52-5	Nitromethane															
79-46-9	Nitropropane, 2-															
5522-43-0	Nitropyrene, 1-															
57835-92-4	Nitropyrene, 4-															
156-10-5	Nitrosodiphenylamine, p-															
3268-87-9	Octachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8,9-															
39001-02-0	Octachlorodibenzofuran, 1,2,3,4,6,7,8,9-															
10028-15-6	Ozone															
74472-37-0	PCB 114 (2,3,4,4,5 Pentachlorobiphenyl)															
31508-00-6	PCB 118 (2,3,4,4,5 Pentachlorobiphenyl)															
65510-44-3	PCB 123 (2,3,4,4,5 Pentachlorobiphenyl)															
57465-28-8	PCB 126 (3,3,4,4,5 Pentachlorobiphenyl)															
38380-0804	PCB 156 (2,3,3,4,4,5 Hexachlorobiphenyl)															
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexachlorobiphenyl)															
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexachlorobiphenyl)															
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexachlorobiphenyl)															
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Heptachlorobipheny															
32598-13-3	PCB 77 (3,3,4,4-Tetrachlorobiphenyl)															
70362-50-4	PCB 81 (3,4,4,5 Tetrachlorobiphenyl)															
32598-14-4	PCB105 (2,3,3,4,4 Pentachlorobiphenyl)															
40321-76-4	Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-															
00-08-1	Pentachlorodibenzodioxins, All Isomers															
57117-41-6	Pentachlorodibenzofuran, 1,2,3,7,8-															
57117-31-4	Pentachlorodibenzofuran, 2,3,4,7,8-															
00-09-0	Pentachlorodibenzofurans, All Isomers															
87-86-5	Pentachlorophenol															
109-66-0	Pentane, n-															
ALIPHATIC-C5-C8	Petroleum Hydrocarbons, Aliphatic Low (C5															
ALIPHATIC-C9-C18	Petroleum Hydrocarbons, Aliphatic Medium															
AROMATIC-C6-C8	Petroleum Hydrocarbons, Aromatic Low (C6															
AROMATIC-C9-C16	Petroleum Hydrocarbons, Aromatic Medium															
85-01-8	Phenanthrene															
108-95-2	Phenol															

75-44-5 Phosgene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U33		STRU34		STRU35		STRU41		STRU43		STRU44		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
7803-51-2	Phosphine															
7664-38-2	Phosphoric acid															
85-44-9	Phthalic anhydride															
59536-65-1	Polybrominated Biphenyls															
1336-36-3	Polychlorinated biphenyls (Aroclors unspeci															
00-08-0	Polychlorinated Dibenzo-P-Dioxins And Fur															
00-05-0	Polychlorinated Dibenzodioxins, Total															
00-05-1	Polychlorinated Dibenzofurans, Total															
130498-29-2	Polycyclic Aromatic Hydrocarbons (PAH)															
00-01-7	Polycyclic Organic Matter (POM)										1.6105E-07	7.0541E-07	3.59E-07	1.57E-06	3.59E-07	
9016-87-9	Polymeric diphenylmethane diisocyanate															
7758-01-2	Potassium bromate															
1120-71-4	Propane sultone, 1,3-															
57-57-8	Propiolactone, beta-															
123-38-6	Propionaldehyde															
115-07-1	Propylene								4.1652E-06	1.8244E-05						
78-87-5	Propylene dichloride (1,2-Dichloropropane)								4.4255E-06	1.9384E-05						
107-98-2	Propylene Glycol Monomethyl Ether															
75-56-9	Propylene oxide															
930-55-2	Pyrrolidine, 1-Nitroso-															
7782-49-2	Selenium										4.3824E-08	1.9195E-07	9.77E-08	4.28E-07	9.77E-08	
0-01-9	Selenium Compounds															
7631-86-9	Silica (crystalline, respirable, PM4)															
1310-73-2	Sodium hydroxide															
10588-01-9	Sodium Dichromate															
7789-06-2	Strontium chromate															
100-42-5	Styrene								4.1652E-06	1.8244E-05						
96-09-3	Styrene oxide															
14808-79-8	Sulfates															
126-33-0	Sulfolane															
7446-09-5	Sulfur dioxide										0.00109559	0.00479868	4.07E-01	1.78E+00	4.07E-01	
7664-93-9	Sulfuric acid (aerosol forms only)															
8014-95-7	Sulfuric Acid mixture w. sulfur trioxide (oleu															
00-09-1	TCDD Eqivalents, 2,3,7,8-															
540-88-5	Tert-Butyl Acetate															
1746-01-6	Tetrachlorodibenzo-p-dioxin, 2,3,7,8-															
00-08-8	Tetrachlorodibenzodioxins, All Isomers															
51207-31-9	Tetrachlorodibenzofuran, 2,3,7,8-															
00-08-6	Tetrachlorodibenzofurans, All Isomers															

630-20-6 Tetrachloroethane, 1,1,1,2-

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U33		STRU34		STRU35		STRU41		STRU43		STRU44		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
79-34-5	Tetrachloroethane, 1,1,2,2-								6.7684E-06	2.9646E-05						
127-18-4	Tetrachloroethylene (Perchloroethylene)								3.3842E-06	1.4823E-05						
811-97-2	Tetrafluoroethane, 1,1,1,2-															
109-99-9	Tetrahydrofuran								2.8636E-06	1.2542E-05						
62-55-5	Thioacetamide															
62-56-6	Thiourea															
108-88-3	Toluene								3.6445E-06	1.5963E-05	6.2083E-06	2.7193E-05	1.38E-05	6.06E-05	1.38E-05	
584-84-9	Toluene-2,4-diisocyanate															
91-08-7	Toluene-2,6-diisocyanate															
95-80-7	Toluene diamine, 2,4-															
26471-62-5	Toluenediisocyanate (mixed isomers)															
95-53-4	Toluidine, o- (Methylaniline, 2-)															
8001-35-2	Toxaphene (chlorinated camphene)															
10061-02-6	trans-1,3-Dichloropropene								1.0934E-05	4.7889E-05						
120-82-1	Trichlorobenzene, 1,2,4-								3.5925E-05	0.00015735						
79-00-5	Trichloroethane, 1,1,2-								2.6032E-06	1.1402E-05						
79-01-6	Trichloroethylene (TCE)								5.8573E-05	0.00025655						
75-69-4	Trichlorofluoromethane (CFC-11)								5.4668E-06	2.3945E-05						
88-06-2	Trichlorophenol, 2,4,6-															
96-18-4	Trichloropropane, 1,2,3-															
96-19-5	Trichloropropene, 1,2,3-															
76-13-1	Trichlorotrifluoroethane, 1,1,2- (CFC-13)								7.5494E-06	3.3066E-05						
121-44-8	Triethylamine															
420-46-2	Trifluoroethane, 1,1,1-															
526-73-8	Trimethylbenzene, 1,2,3-															
95-63-6	Trimethylbenzene, 1,2,4-								4.6858E-06	2.0524E-05						
108-67-8	Trimethylbenzene, 1,3,5-								4.6858E-06	2.0524E-05						
URANIUM-SOLUBLE	Uranium (Soluble Salts)															
7440-61-1	Uranium, Insoluble Compounds															
7440-62-2	Vanadium and Compounds															
1314-62-1	Vanadium Pentoxide, (V2O5)															
108-05-4	Vinyl acetate								3.3842E-06	1.4823E-05						
593-60-2	Vinyl bromide															
75-01-4	Vinyl chloride								1.2496E-06	5.4731E-06						
1330-20-7	Xylenes								2.5252E-05	0.0001106						
108-38-3	Xylenes, m-															
95-47-6	Xylenes, o-															
106-42-3	Xylenes, p-															
13530-65-9	Zinc chromate															

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U45		STRU46		STRU47		STRU48		STRU49		STRU50		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
202-94-8	11H-Benz[b,c]aceanthrylene															
202-98-2	4H-Cyclopenta[d,e,f]chrysene															
75-07-0	Acetaldehyde															
60-35-5	Acetamide															
67-64-1	Acetone															
75-86-5	Acetone Cyanohydrin															
75-05-8	Acetonitrile															
53-96-3	Acetylaminofluorene, 2-															
107-02-8	Acrolein															
79-06-1	Acrylamide															
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-nitro-2-furyl)-															
79-10-7	Acrylic acid															
107-13-1	Acrylonitrile															
111-69-3	Adiponitrile															
ALDEHYDES	Aldehydes															
309-00-2	Aldrin															
ALIPHATIC-MID	Aliphatic Hydrocarbon Streams (Midrange)															
107-05-1	Allyl chloride															
7429-90-5	Aluminum															
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazol, 2-															
6109-97-3	Amino-9-ethylcarbazolehydrochloride, 3-															
117-79-3	Aminoanthraquinone, 2-															
7664-41-7	Ammonia															
62-53-3	Aniline															
191-26-4	Anthanthrene															
7440-36-0	Antimony															
ANTIMONY-COMPS	Antimony Compounds															
1309-64-4	Antimony trioxide															
140-57-8	Aramite															
7440-38-2	Arsenic		3.56E-06	8.14E-07	3.56E-06	3.9749E-07	1.741E-06	3.652E-07	1.5996E-06	3.652E-07	1.5996E-06	2.4265E-07	1.0628E-06	4.9055E-07		
ARSENIC-COMPS	Arsenic Compounds															
1327-53-3	Arsenic Trioxide															
7784-42-1	Arsine															
1332-21-4	Asbestos (units in fibers)															
1332-21-4-LAA	Asbestos, Libby Amphibole (units in fibers)															
123-77-3	Azodicarbonamide															
10294-40-3	Barium Chromate															
199-54-2	Benz[e]aceanthrylene															
202-33-5	Benz[j]aceanthrylene															

211-91-6 Benz[l]aceanthrylene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U45		STRU46		STRU47		STRU48		STRU49		STRU50		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
71-43-2	Benzene		3.74E-05	8.55E-06	3.74E-05	4.1736E-06	1.828E-05	3.8346E-06	1.6795E-05	3.8346E-06	1.6795E-05	2.5478E-06	1.1159E-05	5.1508E-06		
92-87-5	Benzidine															
205-82-3	Benzo(j)fluoranthene															
207-08-9	Benzo(k)fluoranthene															
56-55-3	Benzo[a]anthracene															
50-32-8	Benzo[a]pyrene															
205-99-2	Benzo[b]fluoranthene															
205-12-9	Benzo[c]fluorene															
191-24-2	Benzo[g,h,i]perylene															
65-85-0	Benzoic Acid															
100-44-7	Benzyl chloride															
7440-41-7	Beryllium		2.14E-07	4.88E-08	2.14E-07	2.3849E-08	1.0446E-07	2.1912E-08	9.5974E-08	2.1912E-08	9.5974E-08	1.4559E-08	6.3768E-08	2.9433E-08		
BERYLLIUM-COMPS	Beryllium Compounds															
13510-49-1	Beryllium sulfate															
111-44-4	Bis(2-chloroethyl)ether															
117-81-7	Bis(2-ethylhexyl)phthalate (DEHP)															
542-88-1	Bis(chloromethyl)ether															
7440-42-8	Boron And Borates Only															
10294-34-5	Boron Trichloride															
7637-07-2	Boron Trifluoride															
108-86-1	Bromobenzene															
74-97-5	Bromochloromethane															
75-27-4	Bromodichloromethane															
75-25-2	Bromoform															
74-83-9	Bromomethane															
106-94-5	Bromopropane, 1-															
106-99-0	Butadiene, 1,3-															
78-92-2	Butyl alcohol, sec-															
111-76-2	Butyl Cellosolve (ethylene glycol monobutyl															
25013-16-5	Butylated hydroxyanisole															
3068-88-0	Butyrolactone, beta-															
7440-43-9	Cadmium		1.96E-05	4.48E-06	1.96E-05	2.1862E-06	9.5754E-06	2.0086E-06	8.7976E-06	2.0086E-06	8.7976E-06	1.3346E-06	5.8454E-06	2.698E-06		
CADMIUM-COMPS	Cadmium Compounds															
13765-19-0	Calcium Chromate															
105-60-2	Caprolactum															
75-15-0	Carbon disulfide															
630-08-0	Carbon Monoxide		1.50E+00	3.42E-01	1.50E+00	0.16694374	0.73121359	0.15338235	0.67181471	0.15338235	0.67181471	0.40764706	1.78549412	0.20603182		
56-23-5	Carbon tetrachloride															
463-58-1	Carbonyl sulfide															

111-15-9 Cellosolve Acetate (ethylene glycol monoet

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U45		STRU46		STRU47		STRU48		STRU49		STRU50		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
1306-38-3	Cerium Oxide and Cerium Compounds															
12789-03-6	Chlordane or (57-74-9)															
115-28-6	Chlorendic acid															
108171-26-2	Chlorinated Paraffins (C12, 60% Chlorine)															
7782-50-5	Chlorine															
10049-04-4	Chlorine Oxide (CLO2)															
75-68-3	Chloro-1,1-difluoroethane, 1- (HCFC-142b)															
563-47-3	Chloro-2-methylpropene, 3-															
95-83-0	Chloro-o-phenylenediamine, 4-															
95-69-2	Chloro-o-toluidine, p-															
532-27-4	Chloroacetophenone, 2-															
108-90-7	Chlorobenzene															
98-56-6	Chlorobenzotrifluoride, 4-															
75-45-6	Chlorodifluoromethane (HCFC-22)															
67-66-3	Chloroform															
107-30-2	Chloromethyl Methyl Ether															
88-73-3	Chloronitrobenzene, o-															
100-00-5	Chloronitrobenzene, p-															
76-06-2	Chloropicrin															
126-99-8	Chloroprene															
1333-82-0	Chromic acid mists and dissolved Cr(VI) ae															
7440-47-3	Chromium															
18540-29-9	Chromium (Hexavalent)		2.50E-06	5.70E-07	2.50E-06	2.7824E-07	1.2187E-06	2.5564E-07	1.1197E-06	2.5564E-07	1.1197E-06	1.6985E-07	7.4396E-07	3.4339E-07		
18540-29-9-pm	Chromium (Hexavalent) - Particulate															
CHROM-COMPS	Chromium Compounds															
16065-83-1	Chromium(III) Compounds		2.25E-05	5.13E-06	2.25E-05	2.5042E-06	1.0968E-05	2.3007E-06	1.0077E-05	2.3007E-06	1.0077E-05	1.5287E-06	6.6956E-06	3.0905E-06		
218-01-9	Chrysene (Benzo(a)phenanthrene)															
87-29-6	Cinnamyl anthranilate															
10061-01-5	cis-1,3-Dichloropropene															
8007-45-2	Coal Tar															
7440-48-4	Cobalt		1.50E-06	3.42E-07	1.50E-06	1.6694E-07	7.3121E-07	1.5338E-07	6.7181E-07	1.5338E-07	6.7181E-07	1.0191E-07	4.4637E-07	2.0603E-07		
0-00-7	Coke Oven Emissions															
7440-50-8	Copper															
COPPER-COMPS	Copper Compounds															
120-71-8	Cresidine, p-															
108-39-4	Cresol, m-															
95-48-7	Cresol, o-															
106-44-5	Cresol, p-															
1319-77-3	Cresols/Cresylic acid (isomers and mixture)															

98-82-8 Cumene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U45		STRU46		STRU47		STRU48		STRU49		STRU50		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
135-20-6	Cupferron															
57-12-5	Cyanide (Cyanide ion, Inorganic cyanides, I															
CYANIDE-COMPS	Cyanide Compounds															
110-82-7	Cyclohexane															
108-94-1	Cyclohexanone															
27208-37-3	Cyclopenta[c,d]pyrene															
50-29-3	DDT															
615-05-4	Diaminoanisole, 2,4-															
101-80-4	Diaminodiphenyl ether, 4,4-															
103-33-3	Diazene, Diphenyl															
226-36-8	Dibenz(a,h)acridine															
224-42-0	Dibenz(a,j)acridine															
53-70-3	Dibenz[a,h]anthracene															
192-65-4	Dibenzo(a,e)pyrene															
189-64-0	Dibenzo(a,h)pyrene															
191-30-0	Dibenzo(a,l)pyrene															
194-59-2	Dibenzo(c,g)carbazole, 7H-															
5385-75-1	Dibenzo[a,e]fluoranthene															
189-55-9	Dibenzo[a,i]pyrene															
96-12-8	Dibromo-3-chloropropane, 1,2-															
764-41-0	Dichloro-2-butene, 1,4-															
1476-11-5	Dichloro-2-butene, cis-1,4-															
106-46-7	Dichlorobenzene(p), 1,4-															
25321-22-6	Dichlorobenzenes		2.14E-05	4.88E-06	2.14E-05	2.3849E-06	1.0446E-05	2.1912E-06	9.5974E-06	2.1912E-06	9.5974E-06	1.4559E-06	6.3768E-06	2.9433E-06		
91-94-1	Dichlorobenzidene, 3,3-															
75-71-8	Dichlorodifluoromethane (CFC-12)															
75-35-4	Dichloroethylene (1,1-) (Vinylidene chloride)															
156-60-5	Dichloroethylene, trans-1,2-		1.36E-03	0.02	0.07											
542-75-6	Dichloropropene, 1,3-															
78-88-6	Dichloropropene, 2,3-															
62-73-7	Dichlorvos															
77-73-6	Dicyclopentadiene															
60-57-1	Dieldrin															
0-02-4	Diesel exhaust particulate															
111-42-2	Diethanolamine															
112-34-5	Diethylene Glycol Monobutyl Ether															
111-90-0	Diethylene Glycol Monoethyl Ether															
75-37-6	Difluoroethane, 1,1-															
108-20-3	Diisopropyl Ether															

60-11-7 Dimethyl aminoazobenzene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U45		STRU46		STRU47		STRU48		STRU49		STRU50		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
68-12-2	Dimethyl formamide															
108-01-0	Dimethylamino ethanol, 2-															
57-97-6	Dimethylbenz[a]anthracene, 7,12-															
57-14-7	Dimethylhydrazine, 1,1-															
42397-64-8	Dinitropyrene, 1,6- (BaP)															
42397-65-9	Dinitropyrene, 1,8- (BaP)															
121-14-2	Dinitrotoluene, 2,4-															
123-91-1	Dioxane, 1,4- (1,4-Diethylene dioxide)															
122-66-7	Diphenylhydrazine, 1,2-															
106-89-8	Epichlorohydrin (l-Chloro-2,3-epoxypropane															
106-88-7	Epoxybutane, 1,2-															
110-80-5	Ethoxyethanol, 2- (ethylene glycol monoeth															
141-78-6	Ethyl acetate															
140-88-5	Ethyl Acrylate															
100-41-4	Ethyl benzene															
51-79-6	Ethyl carbamate (Urethane)															
75-00-3	Ethyl chloride (Chloroethane)															
97-63-2	Ethyl Methacrylate															
106-93-4	Ethylene dibromide (Dibromoethane)															
107-06-2	Ethylene dichloride (1,2-Dichloroethane)															
107-21-1	Ethylene glycol															
75-21-8	Ethylene oxide															
96-45-7	Ethylene thiourea															
75-34-3	Ethylidene dichloride (1,1-Dichloroethane)															
206-44-0	Fluoranthene															
FLUORIDES	Fluorides (except hydrogen fluoride)															
50-00-0	Formaldehyde		1.34E-03	3.05E-04	1.34E-03	0.00014906	0.00065287	0.00013695	0.00059983	0.00013695	0.00059983	9.0993E-05	0.00039855	0.00018396		
64-18-6	Formic Acid															
111-30-8	Glutaraldehyde															
0-01-2	Glycol ethers															
76-44-8	Heptachlor															
1024-57-3	Heptachlor epoxide															
35822-46-9	Heptachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8-															
00-08-5	Heptachlorodibenzodioxin, All Isomers															
67562-39-4	Heptachlorodibenzofuran, 1,2,3,4,6,7,8-															
55673-89-7	Heptachlorodibenzofuran, 1,2,3,4,7,8,9-															
00-08-4	Heptachlorodibenzofuran, All Isomers															
142-82-5	Heptane, N															
118-74-1	Hexachlorobenzene															

87-68-3 Hexachlorobutadiene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U45		STRU46		STRU47		STRU48		STRU49		STRU50		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
608-73-1	Hexachlorocyclohexane (technical grade)															
319-84-6	Hexachlorocyclohexane, alpha-															
319-85-7	Hexachlorocyclohexane, beta-1,2,3,4,5,6-															
77-47-4	Hexachlorocyclopentadiene															
39227-28-6	Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-															
57653-85-7	Hexachlorodibenzo-p-dioxin, 1,2,3,6,7,8-															
19408-74-3	Hexachlorodibenzo-p-dioxin, 1,2,3,7,8,9-															
00-08-3	Hexachlorodibenzodioxins, All Isomers															
70648-26-9	Hexachlorodibenzofuran, 1,2,3,4,7,8-															
57117-44-9	Hexachlorodibenzofuran, 1,2,3,6,7,8-															
72918-21-9	Hexachlorodibenzofuran, 1,2,3,7,8,9-															
60851-34-5	Hexachlorodibenzofuran, 2,3,4,6,7,8-															
00-08-2	Hexachlorodibenzofurans, All Isomers															
67-72-1	Hexachloroethane															
822-06-0	Hexamethylene-1,6-diisocyanate															
110-54-3	Hexane		3.21E-02	7.32E-03	3.21E-02	0.00357737	0.01566886	0.00328676	0.01439603	0.00328676	0.01439603	0.00218382	0.00956515	0.00441497		
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl-1-hexanol)															
591-78-6	Hexanone-2															
302-01-2	Hydrazine															
10034-93-2	Hydrazine sulfate															
7647-01-0	Hydrochloric acid (hydrogen chloride)															
74-90-8	Hydrogen cyanide															
7664-39-3	Hydrogen fluoride (Hydrofluoric acid)															
7783-07-5	Hydrogen selenide															
7783-06-4	Hydrogen sulfide															
193-39-5	Indeno(1,2,3-cd)pyrene															
5888-33-5	Isobornyl acrylate															
78-59-1	Isophorone															
67-63-0	Isopropyl alcohol															
7439-92-1	Lead															
7758-97-6	Lead Chromate															
LEAD-COMPS	Lead Compounds															
58-89-9	Lindane (all isomers)															
108-31-6	Maleic anhydride															
7439-96-5	Manganese		8.91E-06	2.03E-06	8.91E-06	7.5522E-07	3.3079E-06	6.9387E-07	3.0392E-06	6.9387E-07	3.0392E-06	4.6103E-07	2.0193E-06	9.3205E-07		
MANGANESE-COMP	Manganese Compounds															
7439-97-6	Mercury (elemental)		4.63E-06	1.06E-06	4.63E-06	5.1673E-07	2.2633E-06	4.7475E-07	2.0794E-06	4.7475E-07	2.0794E-06	3.1544E-07	1.3816E-06	6.3772E-07		
MERCURY-COMPS	Mercury Compounds															
126-98-7	Methacrylonitrile															

67-56-1 Methanol

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U45		STRU46		STRU47		STRU48		STRU49		STRU50		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
109-86-4	Methoxyethanol, 2- (ethylene glycol monom															
96-33-3	Methyl acrylate															
110-49-6	Methyl Cellosolve Acetate															
74-87-3	Methyl chloride (Chloromethane)															
71-55-6	Methyl chloroform (1,1,1-Trichloroethane)															
78-93-3	Methyl ethyl ketone (2-Butanone)															
60-34-4	Methyl Hydrazine															
108-10-1	Methyl isobutyl ketone (Hexone)															
624-83-9	Methyl isocyanate															
80-62-6	Methyl methacrylate															
1634-04-4	Methyl tert butyl ether															
56-49-5	Methylcholanthrene, 3-															
3697-24-3	Methylchrysene, 5-															
101-14-4	Methylene bis(2-chloroaniline), 4,4-															
74-95-3	Methylene Bromide															
75-09-2	Methylene chloride (Dichloromethane)															
101-68-8	Methylene diphenyl diisocyanate (MDI)															
101-77-9	Methylenedianiline, 4,4-															
90-94-8	Michler's ketone															
10595-95-6	N- Nitrosomethylethylamine															
924-16-3	N-Nitrosodi-n-butylamine															
621-64-7	N-Nitrosodi-n-propylamine															
55-18-5	N-Nitrosodiethylamine															
62-75-9	N-Nitrosodimethylamine															
86-30-6	N-Nitrosodiphenylamine															
59-89-2	N-Nitrosomorpholine															
100-75-4	N-Nitrosopiperidine															
111-84-2	N-Nonane															
64724-95-6	Naphtha, High Flash Aromatic (HFAN)															
91-20-3	Naphthalene		1.09E-05	2.48E-06	1.09E-05	1.2123E-06	5.31E-06	1.1138E-06	4.8787E-06	1.1138E-06	4.8787E-06	7.4007E-07	3.2415E-06	1.4962E-06		
193-09-9	Naphtho[2,3-e]pyrene															
7440-02-0	Nickel		3.74E-05	8.55E-06	3.74E-05	4.1736E-06	1.828E-05	3.8346E-06	1.6795E-05	3.8346E-06	1.6795E-05	2.5478E-06	1.1159E-05	5.1508E-06		
NICKEL-COMPS	Nickel Compounds															
1313-99-1	Nickel oxide															
0-02-5	Nickel refinery dust from the pyrometallurgic															
12035-72-2	Nickel sulfide (NI3S2)															
7697-37-2	Nitric acid															
139-13-9	Nitrilotriacetic acid															
18662-53-8	Nitrilotriacetic acid, trisodium salt monohydr															

602-87-9 Nitroacenaphthene, 5-

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U45		STRU46		STRU47		STRU48		STRU49		STRU50		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	
88-74-4	Nitroaniline, 2-														
100-01-6	Nitroaniline, 4-														
98-95-3	Nitrobenzene														
7496-02-8	Nitrochrysene, 6-														
607-57-8	Nitrofluorene, 2-														
10102-44-0	Nitrogen dioxide (NO2)		1.78E+00	4.07E-01	1.78E+00	0.19874255	0.87049236	0.18259804	0.79977941	0.18259804	0.79977941	0.12132353	0.53139706	0.24527598	
75-52-5	Nitromethane														
79-46-9	Nitropropane, 2-														
5522-43-0	Nitropyrene, 1-														
57835-92-4	Nitropyrene, 4-														
156-10-5	Nitrosodiphenylamine, p-														
3268-87-9	Octachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8,9-														
39001-02-0	Octachlorodibenzofuran, 1,2,3,4,6,7,8,9-														
10028-15-6	Ozone														
74472-37-0	PCB 114 (2,3,4,4,5 Pentachlorobiphenyl)														
31508-00-6	PCB 118 (2,3,4,4,5 Pentachlorobiphenyl)														
65510-44-3	PCB 123 (2,3,4,4,5 Pentachlorobiphenyl)														
57465-28-8	PCB 126 (3,3,4,4,5 Pentachlorobiphenyl)														
38380-0804	PCB 156 (2,3,3,4,4,5 Hexachlorobiphenyl)														
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexachlorobiphenyl)														
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexachlorobiphenyl)														
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexachlorobiphenyl)														
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Heptachlorobipheny														
32598-13-3	PCB 77 (3,3,4,4-Tetrachlorobiphenyl)														
70362-50-4	PCB 81 (3,4,4,5 Tetrachlorobiphenyl)														
32598-14-4	PCB105 (2,3,3,4,4 Pentachlorobiphenyl)														
40321-76-4	Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-														
00-08-1	Pentachlorodibenzodioxins, All Isomers														
57117-41-6	Pentachlorodibenzofuran, 1,2,3,7,8-														
57117-31-4	Pentachlorodibenzofuran, 2,3,4,7,8-														
00-09-0	Pentachlorodibenzofurans, All Isomers														
87-86-5	Pentachlorophenol														
109-66-0	Pentane, n-														
ALIPHATIC-C5-C8	Petroleum Hydrocarbons, Aliphatic Low (C5														
ALIPHATIC-C9-C18	Petroleum Hydrocarbons, Aliphatic Medium														
AROMATIC-C6-C8	Petroleum Hydrocarbons, Aromatic Low (C6														
AROMATIC-C9-C16	Petroleum Hydrocarbons, Aromatic Medium														
85-01-8	Phenanthrene														
108-95-2	Phenol														

75-44-5 Phosgene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U45		STRU46		STRU47		STRU48		STRU49		STRU50		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
7803-51-2	Phosphine															
7664-38-2	Phosphoric acid															
85-44-9	Phthalic anhydride															
59536-65-1	Polybrominated Biphenyls															
1336-36-3	Polychlorinated biphenyls (Aroclors unspeci															
00-08-0	Polychlorinated Dibenzo-P-Dioxins And Fur															
00-05-0	Polychlorinated Dibenzodioxins, Total															
00-05-1	Polychlorinated Dibenzofurans, Total															
130498-29-2	Polycyclic Aromatic Hydrocarbons (PAH)															
00-01-7	Polycyclic Organic Matter (POM)		1.57E-06	3.59E-07	1.57E-06	1.7529E-07	7.6777E-07	1.6105E-07	7.0541E-07	1.6105E-07	7.0541E-07	1.0701E-07	4.6869E-07	2.1633E-07		
9016-87-9	Polymeric diphenylmethane diisocyanate															
7758-01-2	Potassium bromate															
1120-71-4	Propane sultone, 1,3-															
57-57-8	Propiolactone, beta-															
123-38-6	Propionaldehyde															
115-07-1	Propylene															
78-87-5	Propylene dichloride (1,2-Dichloropropane)															
107-98-2	Propylene Glycol Monomethyl Ether															
75-56-9	Propylene oxide															
930-55-2	Pyrrolidine, 1-Nitroso-															
7782-49-2	Selenium		4.28E-07	9.77E-08	4.28E-07	4.7698E-08	2.0892E-07	4.3824E-08	1.9195E-07	4.3824E-08	1.9195E-07	2.9118E-08	1.2754E-07	5.8866E-08		
0-01-9	Selenium Compounds															
7631-86-9	Silica (crystalline, respirable, PM4)															
1310-73-2	Sodium hydroxide															
10588-01-9	Sodium Dichromate															
7789-06-2	Strontium chromate															
100-42-5	Styrene															
96-09-3	Styrene oxide															
14808-79-8	Sulfates															
126-33-0	Sulfolane															
7446-09-5	Sulfur dioxide		1.78E+00	4.07E-01	1.78E+00	0.00119246	0.00522295	0.00109559	0.00479868	0.00109559	0.00479868	0.00072794	0.00318838	0.00147166		
7664-93-9	Sulfuric acid (aerosol forms only)															
8014-95-7	Sulfuric Acid mixture w. sulfur trioxide (oleu															
00-09-1	TCDD Eqivalents, 2,3,7,8-															
540-88-5	Tert-Butyl Acetate															
1746-01-6	Tetrachlorodibenzo-p-dioxin, 2,3,7,8-															
00-08-8	Tetrachlorodibenzodioxins, All Isomers															
51207-31-9	Tetrachlorodibenzofuran, 2,3,7,8-															
00-08-6	Tetrachlorodibenzofurans, All Isomers															

630-20-6 Tetrachloroethane, 1,1,1,2-

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U45		STRU46		STRU47		STRU48		STRU49		STRU50		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
79-34-5	Tetrachloroethane, 1,1,2,2-															
127-18-4	Tetrachloroethylene (Perchloroethylene)															
811-97-2	Tetrafluoroethane, 1,1,1,2-															
109-99-9	Tetrahydrofuran															
62-55-5	Thioacetamide															
62-56-6	Thiourea															
108-88-3	Toluene		6.06E-05	1.38E-05	6.06E-05	6.7572E-06	2.9597E-05	6.2083E-06	2.7193E-05	6.2083E-06	2.7193E-05	4.125E-06	1.8068E-05	8.3394E-06		
584-84-9	Toluene-2,4-diisocyanate															
91-08-7	Toluene-2,6-diisocyanate															
95-80-7	Toluene diamine, 2,4-															
26471-62-5	Toluenediisocyanate (mixed isomers)															
95-53-4	Toluidine, o- (Methylaniline, 2-)															
8001-35-2	Toxaphene (chlorinated camphene)															
10061-02-6	trans-1,3-Dichloropropene															
120-82-1	Trichlorobenzene, 1,2,4-															
79-00-5	Trichloroethane, 1,1,2-															
79-01-6	Trichloroethylene (TCE)															
75-69-4	Trichlorofluoromethane (CFC-11)															
88-06-2	Trichlorophenol, 2,4,6-															
96-18-4	Trichloropropane, 1,2,3-															
96-19-5	Trichloropropene, 1,2,3-															
76-13-1	Trichlorotrifluoroethane, 1,1,2- (CFC-13)															
121-44-8	Triethylamine															
420-46-2	Trifluoroethane, 1,1,1-															
526-73-8	Trimethylbenzene, 1,2,3-															
95-63-6	Trimethylbenzene, 1,2,4-															
108-67-8	Trimethylbenzene, 1,3,5-															
URANIUM-SOLUBLE	Uranium (Soluble Salts)															
7440-61-1	Uranium, Insoluble Compounds															
7440-62-2	Vanadium and Compounds															
1314-62-1	Vanadium Pentoxide, (V2O5)															
108-05-4	Vinyl acetate															
593-60-2	Vinyl bromide															
75-01-4	Vinyl chloride															
1330-20-7	Xylenes															
108-38-3	Xylenes, m-															
95-47-6	Xylenes, o-															
106-42-3	Xylenes, p-															
13530-65-9	Zinc chromate															

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U51		STRU52		STRU53		STRU59		STRU60		STRU56		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Hourly Emissions (lb/hr)
202-94-8	11H-Benz[b,c]aceanthrylene														
202-98-2	4H-Cyclopenta[d,e,f]chrysene														
75-07-0	Acetaldehyde														
60-35-5	Acetamide														
67-64-1	Acetone														
75-86-5	Acetone Cyanohydrin														
75-05-8	Acetonitrile														
53-96-3	Acetylaminofluorene, 2-														
107-02-8	Acrolein														
79-06-1	Acrylamide														
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-nitro-2-furyl)-														
79-10-7	Acrylic acid														
107-13-1	Acrylonitrile														
111-69-3	Adiponitrile														
ALDEHYDES	Aldehydes														
309-00-2	Aldrin														
ALIPHATIC-MID	Aliphatic Hydrocarbon Streams (Midrange)														
107-05-1	Allyl chloride														
7429-90-5	Aluminum														
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazol, 2-														
6109-97-3	Amino-9-ethylcarbazolehydrochloride, 3-														
117-79-3	Aminoanthraquinone, 2-														
7664-41-7	Ammonia														
62-53-3	Aniline														
191-26-4	Anthanthrene														
7440-36-0	Antimony														
ANTIMONY-COMPS	Antimony Compounds														
1309-64-4	Antimony trioxide														
140-57-8	Aramite														
7440-38-2	Arsenic		2.1486E-06	4.9055E-07	2.1486E-06	4.9055E-07	2.1486E-06						4.9055E-07	2.1486E-06	
ARSENIC-COMPS	Arsenic Compounds														
1327-53-3	Arsenic Trioxide														
7784-42-1	Arsine														
1332-21-4	Asbestos (units in fibers)														
1332-21-4-LAA	Asbestos, Libby Amphibole (units in fibers)														
123-77-3	Azodicarbonamide														
10294-40-3	Barium Chromate														
199-54-2	Benz[e]aceanthrylene														
202-33-5	Benz[j]aceanthrylene														

211-91-6 Benz[l]aceanthrylene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U51		STRU52		STRU53		STRU59		STRU60		STRU56		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Hourly Emissions (lb/hr)
71-43-2	Benzene		2.256E-05	5.1508E-06	2.256E-05	5.1508E-06	2.256E-05						5.1508E-06	2.256E-05	
92-87-5	Benzidine														
205-82-3	Benzo(j)fluoranthene														
207-08-9	Benzo(k)fluoranthene														
56-55-3	Benzo[a]anthracene														
50-32-8	Benzo[a]pyrene														
205-99-2	Benzo[b]fluoranthene														
205-12-9	Benzo[c]fluorene														
191-24-2	Benzo[g,h,i]perylene														
65-85-0	Benzoic Acid														
100-44-7	Benzyl chloride														
7440-41-7	Beryllium		1.2892E-07	2.9433E-08	1.2892E-07	2.9433E-08	1.2892E-07						2.9433E-08	1.2892E-07	
BERYLLIUM-COMPS	Beryllium Compounds														
13510-49-1	Beryllium sulfate														
111-44-4	Bis(2-chloroethyl)ether														
117-81-7	Bis(2-ethylhexyl)phthalate (DEHP)														
542-88-1	Bis(chloromethyl)ether														
7440-42-8	Boron And Borates Only														
10294-34-5	Boron Trichloride														
7637-07-2	Boron Trifluoride														
108-86-1	Bromobenzene														
74-97-5	Bromochloromethane														
75-27-4	Bromodichloromethane														
75-25-2	Bromoform														
74-83-9	Bromomethane														
106-94-5	Bromopropane, 1-														
106-99-0	Butadiene, 1,3-														
78-92-2	Butyl alcohol, sec-														
111-76-2	Butyl Cellosolve (ethylene glycol monobutyl														
25013-16-5	Butylated hydroxyanisole														
3068-88-0	Butyrolactone, beta-														
7440-43-9	Cadmium		1.1817E-05	2.698E-06	1.1817E-05	2.698E-06	1.1817E-05						2.698E-06	1.1817E-05	
CADMIUM-COMPS	Cadmium Compounds														
13765-19-0	Calcium Chromate														
105-60-2	Caprolactum														
75-15-0	Carbon disulfide														
630-08-0	Carbon Monoxide		0.90241939	0.20603182	0.90241939	0.20603182	0.90241939						0.20603182	0.90241939	
56-23-5	Carbon tetrachloride														
463-58-1	Carbonyl sulfide														

111-15-9 Cellosolve Acetate (ethylene glycol monoet

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U51		STRU52		STRU53		STRU59		STRU60		STRU56		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Hourly Emissions (lb/hr)
1306-38-3	Cerium Oxide and Cerium Compounds														
12789-03-6	Chlordane or (57-74-9)														
115-28-6	Chlorendic acid														
108171-26-2	Chlorinated Paraffins (C12, 60% Chlorine)														
7782-50-5	Chlorine														
10049-04-4	Chlorine Oxide (CLO2)														
75-68-3	Chloro-1,1-difluoroethane, 1- (HCFC-142b)														
563-47-3	Chloro-2-methylpropene, 3-														
95-83-0	Chloro-o-phenylenediamine, 4-														
95-69-2	Chloro-o-toluidine, p-														
532-27-4	Chloroacetophenone, 2-														
108-90-7	Chlorobenzene														
98-56-6	Chlorobenzotrifluoride, 4-														
75-45-6	Chlorodifluoromethane (HCFC-22)														
67-66-3	Chloroform														
107-30-2	Chloromethyl Methyl Ether														
88-73-3	Chloronitrobenzene, o-														
100-00-5	Chloronitrobenzene, p-														
76-06-2	Chloropicrin														
126-99-8	Chloroprene														
1333-82-0	Chromic acid mists and dissolved Cr(VI) ae														
7440-47-3	Chromium														
18540-29-9	Chromium (Hexavalent)		1.504E-06	3.4339E-07	1.504E-06	3.4339E-07	1.504E-06						3.4339E-07	1.504E-06	
18540-29-9-pm	Chromium (Hexavalent) - Particulate														
CHROM-COMPS	Chromium Compounds														
16065-83-1	Chromium(III) Compounds		1.3536E-05	3.0905E-06	1.3536E-05	3.0905E-06	1.3536E-05						3.0905E-06	1.3536E-05	
218-01-9	Chrysene (Benzo(a)phenanthrene)														
87-29-6	Cinnamyl anthranilate														
10061-01-5	cis-1,3-Dichloropropene														
8007-45-2	Coal Tar														
7440-48-4	Cobalt		9.0242E-07	2.0603E-07	9.0242E-07	2.0603E-07	9.0242E-07						2.0603E-07	9.0242E-07	
0-00-7	Coke Oven Emissions														
7440-50-8	Copper														
COPPER-COMPS	Copper Compounds														
120-71-8	Cresidine, p-														
108-39-4	Cresol, m-														
95-48-7	Cresol, o-														
106-44-5	Cresol, p-														
1319-77-3	Cresols/Cresylic acid (isomers and mixture)														

98-82-8 Cumene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U51		STRU52		STRU53		STRU59		STRU60		STRU56		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Hourly Emissions (lb/hr)
135-20-6	Cupferron														
57-12-5	Cyanide (Cyanide ion, Inorganic cyanides, I														
CYANIDE-COMPS	Cyanide Compounds														
110-82-7	Cyclohexane														
108-94-1	Cyclohexanone														
27208-37-3	Cyclopenta[c,d]pyrene														
50-29-3	DDT														
615-05-4	Diaminoanisole, 2,4-														
101-80-4	Diaminodiphenyl ether, 4,4-														
103-33-3	Diazene, Diphenyl														
226-36-8	Dibenz(a,h)acridine														
224-42-0	Dibenz(a,j)acridine														
53-70-3	Dibenz[a,h]anthracene														
192-65-4	Dibenzo(a,e)pyrene														
189-64-0	Dibenzo(a,h)pyrene														
191-30-0	Dibenzo(a,l)pyrene														
194-59-2	Dibenzo(c,g)carbazole, 7H-														
5385-75-1	Dibenzo[a,e]fluoranthene														
189-55-9	Dibenzo[a,i]pyrene														
96-12-8	Dibromo-3-chloropropane, 1,2-														
764-41-0	Dichloro-2-butene, 1,4-														
1476-11-5	Dichloro-2-butene, cis-1,4-														
106-46-7	Dichlorobenzene(p), 1,4-														
25321-22-6	Dichlorobenzenes		1.2892E-05	2.9433E-06	1.2892E-05	2.9433E-06	1.2892E-05						2.9433E-06	1.2892E-05	
91-94-1	Dichlorobenzidene, 3,3-														
75-71-8	Dichlorodifluoromethane (CFC-12)														
75-35-4	Dichloroethylene (1,1-) (Vinylidene chloride)														
156-60-5	Dichloroethylene, trans-1,2-								2.59E-01	1.13E+00	1.88E-03	8.24E-03	1.88E-03	8.24E-03	1.91E-04
542-75-6	Dichloropropene, 1,3-														
78-88-6	Dichloropropene, 2,3-														
62-73-7	Dichlorvos														
77-73-6	Dicyclopentadiene														
60-57-1	Dieldrin														
0-02-4	Diesel exhaust particulate														
111-42-2	Diethanolamine														
112-34-5	Diethylene Glycol Monobutyl Ether														
111-90-0	Diethylene Glycol Monoethyl Ether														
75-37-6	Difluoroethane, 1,1-														
108-20-3	Diisopropyl Ether														

60-11-7 Dimethyl aminoazobenzene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U51		STRU52		STRU53		STRU59		STRU60		STRU56		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
68-12-2	Dimethyl formamide															
108-01-0	Dimethylamino ethanol, 2-															
57-97-6	Dimethylbenz[a]anthracene, 7,12-															
57-14-7	Dimethylhydrazine, 1,1-															
42397-64-8	Dinitropyrene, 1,6- (BaP)															
42397-65-9	Dinitropyrene, 1,8- (BaP)															
121-14-2	Dinitrotoluene, 2,4-															
123-91-1	Dioxane, 1,4- (1,4-Diethylene dioxide)															
122-66-7	Diphenylhydrazine, 1,2-															
106-89-8	Epichlorohydrin (l-Chloro-2,3-epoxypropane															
106-88-7	Epoxybutane, 1,2-															
110-80-5	Ethoxyethanol, 2- (ethylene glycol monoeth															
141-78-6	Ethyl acetate															
140-88-5	Ethyl Acrylate															
100-41-4	Ethyl benzene															
51-79-6	Ethyl carbamate (Urethane)															
75-00-3	Ethyl chloride (Chloroethane)															
97-63-2	Ethyl Methacrylate															
106-93-4	Ethylene dibromide (Dibromoethane)															
107-06-2	Ethylene dichloride (1,2-Dichloroethane)															
107-21-1	Ethylene glycol															
75-21-8	Ethylene oxide															
96-45-7	Ethylene thiourea															
75-34-3	Ethylidene dichloride (1,1-Dichloroethane)															
206-44-0	Fluoranthene															
FLUORIDES	Fluorides (except hydrogen fluoride)															
50-00-0	Formaldehyde		0.00080573	0.00018396	0.00080573	0.00018396	0.00080573						0.00018396	0.00080573		
64-18-6	Formic Acid															
111-30-8	Glutaraldehyde															
0-01-2	Glycol ethers															
76-44-8	Heptachlor															
1024-57-3	Heptachlor epoxide															
35822-46-9	Heptachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8-															
00-08-5	Heptachlorodibenzodioxin, All Isomers															
67562-39-4	Heptachlorodibenzofuran, 1,2,3,4,6,7,8-															
55673-89-7	Heptachlorodibenzofuran, 1,2,3,4,7,8,9-															
00-08-4	Heptachlorodibenzofuran, All Isomers															
142-82-5	Heptane, N															
118-74-1	Hexachlorobenzene															

87-68-3 Hexachlorobutadiene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U51		STRU52		STRU53		STRU59		STRU60		STRU56		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
608-73-1	Hexachlorocyclohexane (technical grade)															
319-84-6	Hexachlorocyclohexane, alpha-															
319-85-7	Hexachlorocyclohexane, beta-1,2,3,4,5,6-															
77-47-4	Hexachlorocyclopentadiene															
39227-28-6	Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-															
57653-85-7	Hexachlorodibenzo-p-dioxin, 1,2,3,6,7,8-															
19408-74-3	Hexachlorodibenzo-p-dioxin, 1,2,3,7,8,9-															
00-08-3	Hexachlorodibenzodioxins, All Isomers															
70648-26-9	Hexachlorodibenzofuran, 1,2,3,4,7,8-															
57117-44-9	Hexachlorodibenzofuran, 1,2,3,6,7,8-															
72918-21-9	Hexachlorodibenzofuran, 1,2,3,7,8,9-															
60851-34-5	Hexachlorodibenzofuran, 2,3,4,6,7,8-															
00-08-2	Hexachlorodibenzofurans, All Isomers															
67-72-1	Hexachloroethane															
822-06-0	Hexamethylene-1,6-diisocyanate															
110-54-3	Hexane		0.01933756	0.00441497	0.01933756	0.00441497	0.01933756						0.00441497	0.01933756		
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl-1-hexanol)															
591-78-6	Hexanone-2															
302-01-2	Hydrazine															
10034-93-2	Hydrazine sulfate															
7647-01-0	Hydrochloric acid (hydrogen chloride)															
74-90-8	Hydrogen cyanide															
7664-39-3	Hydrogen fluoride (Hydrofluoric acid)															
7783-07-5	Hydrogen selenide															
7783-06-4	Hydrogen sulfide															
193-39-5	Indeno(1,2,3-cd)pyrene															
5888-33-5	Isobornyl acrylate															
78-59-1	Isophorone															
67-63-0	Isopropyl alcohol															
7439-92-1	Lead															
7758-97-6	Lead Chromate															
LEAD-COMPS	Lead Compounds															
58-89-9	Lindane (all isomers)															
108-31-6	Maleic anhydride															
7439-96-5	Manganese		4.0824E-06	9.3205E-07	4.0824E-06	9.3205E-07	4.0824E-06						9.3205E-07	4.0824E-06		
MANGANESE-COMP	Manganese Compounds															
7439-97-6	Mercury (elemental)		2.7932E-06	6.3772E-07	2.7932E-06	6.3772E-07	2.7932E-06						6.3772E-07	2.7932E-06		
MERCURY-COMPS	Mercury Compounds															
126-98-7	Methacrylonitrile															

67-56-1 Methanol

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U51		STRU52		STRU53		STRU59		STRU60		STRU56		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
109-86-4	Methoxyethanol, 2- (ethylene glycol monom															
96-33-3	Methyl acrylate															
110-49-6	Methyl Cellosolve Acetate															
74-87-3	Methyl chloride (Chloromethane)															
71-55-6	Methyl chloroform (1,1,1-Trichloroethane)															
78-93-3	Methyl ethyl ketone (2-Butanone)															
60-34-4	Methyl Hydrazine															
108-10-1	Methyl isobutyl ketone (Hexone)															
624-83-9	Methyl isocyanate															
80-62-6	Methyl methacrylate															
1634-04-4	Methyl tert butyl ether															
56-49-5	Methylcholanthrene, 3-															
3697-24-3	Methylchrysene, 5-															
101-14-4	Methylene bis(2-chloroaniline), 4,4-															
74-95-3	Methylene Bromide															
75-09-2	Methylene chloride (Dichloromethane)															
101-68-8	Methylene diphenyl diisocyanate (MDI)															
101-77-9	Methylenedianiline, 4,4-															
90-94-8	Michler's ketone															
10595-95-6	N- Nitrosomethylethylamine															
924-16-3	N-Nitrosodi-n-butylamine															
621-64-7	N-Nitrosodi-n-propylamine															
55-18-5	N-Nitrosodiethylamine															
62-75-9	N-Nitrosodimethylamine															
86-30-6	N-Nitrosodiphenylamine															
59-89-2	N-Nitrosomorpholine															
100-75-4	N-Nitrosopiperidine															
111-84-2	N-Nonane															
64724-95-6	Naphtha, High Flash Aromatic (HFAN)															
91-20-3	Naphthalene		6.5533E-06	1.4962E-06	6.5533E-06	1.4962E-06	6.5533E-06						1.4962E-06	6.5533E-06		
193-09-9	Naphtho[2,3-e]pyrene															
7440-02-0	Nickel		2.256E-05	5.1508E-06	2.256E-05	5.1508E-06	2.256E-05						5.1508E-06	2.256E-05		
NICKEL-COMPS	Nickel Compounds															
1313-99-1	Nickel oxide															
0-02-5	Nickel refinery dust from the pyrometallurgic															
12035-72-2	Nickel sulfide (NI3S2)															
7697-37-2	Nitric acid															
139-13-9	Nitrilotriacetic acid															
18662-53-8	Nitrilotriacetic acid, trisodium salt monohydr															

602-87-9 Nitroacenaphthene, 5-

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U51		STRU52		STRU53		STRU59		STRU60		STRU56		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Hourly Emissions (lb/hr)
88-74-4	Nitroaniline, 2-														
100-01-6	Nitroaniline, 4-														
98-95-3	Nitrobenzene														
7496-02-8	Nitrochrysene, 6-														
607-57-8	Nitrofluorene, 2-														
10102-44-0	Nitrogen dioxide (NO2)		1.07430879	0.24527598	1.07430879	0.24527598	1.07430879						0.24527598	1.07430879	
75-52-5	Nitromethane														
79-46-9	Nitropropane, 2-														
5522-43-0	Nitropyrene, 1-														
57835-92-4	Nitropyrene, 4-														
156-10-5	Nitrosodiphenylamine, p-														
3268-87-9	Octachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8,9-														
39001-02-0	Octachlorodibenzofuran, 1,2,3,4,6,7,8,9-														
10028-15-6	Ozone														
74472-37-0	PCB 114 (2,3,4,4,5 Pentachlorobiphenyl)														
31508-00-6	PCB 118 (2,3,4,4,5 Pentachlorobiphenyl)														
65510-44-3	PCB 123 (2,3,4,4,5 Pentachlorobiphenyl)														
57465-28-8	PCB 126 (3,3,4,4,5 Pentachlorobiphenyl)														
38380-0804	PCB 156 (2,3,3,4,4,5 Hexachlorobiphenyl)														
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexachlorobiphenyl)														
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexachlorobiphenyl)														
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexachlorobiphenyl)														
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Heptachlorobipheny														
32598-13-3	PCB 77 (3,3,4,4-Tetrachlorobiphenyl)														
70362-50-4	PCB 81 (3,4,4,5 Tetrachlorobiphenyl)														
32598-14-4	PCB105 (2,3,3,4,4 Pentachlorobiphenyl)														
40321-76-4	Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-														
00-08-1	Pentachlorodibenzodioxins, All Isomers														
57117-41-6	Pentachlorodibenzofuran, 1,2,3,7,8-														
57117-31-4	Pentachlorodibenzofuran, 2,3,4,7,8-														
00-09-0	Pentachlorodibenzofurans, All Isomers														
87-86-5	Pentachlorophenol														
109-66-0	Pentane, n-														
ALIPHATIC-C5-C8	Petroleum Hydrocarbons, Aliphatic Low (C5														
ALIPHATIC-C9-C18	Petroleum Hydrocarbons, Aliphatic Medium														
AROMATIC-C6-C8	Petroleum Hydrocarbons, Aromatic Low (C6														
AROMATIC-C9-C16	Petroleum Hydrocarbons, Aromatic Medium														
85-01-8	Phenanthrene														
108-95-2	Phenol														

75-44-5 Phosgene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U51		STRU52		STRU53		STRU59		STRU60		STRU56		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Hourly Emissions (lb/hr)
7803-51-2	Phosphine														
7664-38-2	Phosphoric acid														
85-44-9	Phthalic anhydride														
59536-65-1	Polybrominated Biphenyls														
1336-36-3	Polychlorinated biphenyls (Aroclors unspeci														
00-08-0	Polychlorinated Dibenzo-P-Dioxins And Fur														
00-05-0	Polychlorinated Dibenzodioxins, Total														
00-05-1	Polychlorinated Dibenzofurans, Total														
130498-29-2	Polycyclic Aromatic Hydrocarbons (PAH)														
00-01-7	Polycyclic Organic Matter (POM)		9.4754E-07	2.1633E-07	9.4754E-07	2.1633E-07	9.4754E-07						2.1633E-07	9.4754E-07	
9016-87-9	Polymeric diphenylmethane diisocyanate														
7758-01-2	Potassium bromate														
1120-71-4	Propane sultone, 1,3-														
57-57-8	Propiolactone, beta-														
123-38-6	Propionaldehyde														
115-07-1	Propylene														
78-87-5	Propylene dichloride (1,2-Dichloropropane)														
107-98-2	Propylene Glycol Monomethyl Ether														
75-56-9	Propylene oxide														
930-55-2	Pyrrolidine, 1-Nitroso-														
7782-49-2	Selenium		2.5783E-07	5.8866E-08	2.5783E-07	5.8866E-08	2.5783E-07						5.8866E-08	2.5783E-07	
0-01-9	Selenium Compounds														
7631-86-9	Silica (crystalline, respirable, PM4)														
1310-73-2	Sodium hydroxide														
10588-01-9	Sodium Dichromate														
7789-06-2	Strontium chromate														
100-42-5	Styrene														
96-09-3	Styrene oxide														
14808-79-8	Sulfates														
126-33-0	Sulfolane														
7446-09-5	Sulfur dioxide		0.00644585	0.00147166	0.00644585	0.00147166	0.00644585						0.00147166	0.00644585	
7664-93-9	Sulfuric acid (aerosol forms only)														
8014-95-7	Sulfuric Acid mixture w. sulfur trioxide (oleu														
00-09-1	TCDD Eqivalents, 2,3,7,8-														
540-88-5	Tert-Butyl Acetate														
1746-01-6	Tetrachlorodibenzo-p-dioxin, 2,3,7,8-														
00-08-8	Tetrachlorodibenzodioxins, All Isomers														
51207-31-9	Tetrachlorodibenzofuran, 2,3,7,8-														
00-08-6	Tetrachlorodibenzofurans, All Isomers														

630-20-6 Tetrachloroethane, 1,1,1,2-

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U51		STRU52		STRU53		STRU59		STRU60		STRU56		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
79-34-5	Tetrachloroethane, 1,1,2,2-															
127-18-4	Tetrachloroethylene (Perchloroethylene)															
811-97-2	Tetrafluoroethane, 1,1,1,2-															
109-99-9	Tetrahydrofuran															
62-55-5	Thioacetamide															
62-56-6	Thiourea															
108-88-3	Toluene		3.6526E-05	8.3394E-06	3.6526E-05	8.3394E-06	3.6526E-05						8.3394E-06	3.6526E-05		
584-84-9	Toluene-2,4-diisocyanate															
91-08-7	Toluene-2,6-diisocyanate															
95-80-7	Toluene diamine, 2,4-															
26471-62-5	Toluenediisocyanate (mixed isomers)															
95-53-4	Toluidine, o- (Methylaniline, 2-)															
8001-35-2	Toxaphene (chlorinated camphene)															
10061-02-6	trans-1,3-Dichloropropene															
120-82-1	Trichlorobenzene, 1,2,4-															
79-00-5	Trichloroethane, 1,1,2-															
79-01-6	Trichloroethylene (TCE)															
75-69-4	Trichlorofluoromethane (CFC-11)															
88-06-2	Trichlorophenol, 2,4,6-															
96-18-4	Trichloropropane, 1,2,3-															
96-19-5	Trichloropropene, 1,2,3-															
76-13-1	Trichlorotrifluoroethane, 1,1,2- (CFC-13)															
121-44-8	Triethylamine															
420-46-2	Trifluoroethane, 1,1,1-															
526-73-8	Trimethylbenzene, 1,2,3-															
95-63-6	Trimethylbenzene, 1,2,4-															
108-67-8	Trimethylbenzene, 1,3,5-															
URANIUM-SOLUBLE	Uranium (Soluble Salts)															
7440-61-1	Uranium, Insoluble Compounds															
7440-62-2	Vanadium and Compounds															
1314-62-1	Vanadium Pentoxide, (V2O5)															
108-05-4	Vinyl acetate															
593-60-2	Vinyl bromide															
75-01-4	Vinyl chloride															
1330-20-7	Xylenes															
108-38-3	Xylenes, m-															
95-47-6	Xylenes, o-															
106-42-3	Xylenes, p-															
13530-65-9	Zinc chromate															

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U57		SBLDGIA		NBLDGIA		STRU67		STRU68		STRU69		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
202-94-8	11H-Benz[b,c]aceanthrylene															
202-98-2	4H-Cyclopenta[d,e,f]chrysene															
75-07-0	Acetaldehyde															
60-35-5	Acetamide															
67-64-1	Acetone															
75-86-5	Acetone Cyanohydrin															
75-05-8	Acetonitrile															
53-96-3	Acetylaminofluorene, 2-															
107-02-8	Acrolein															
79-06-1	Acrylamide															
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-nitro-2-furyl)-															
79-10-7	Acrylic acid															
107-13-1	Acrylonitrile															
111-69-3	Adiponitrile															
ALDEHYDES	Aldehydes															
309-00-2	Aldrin															
ALIPHATIC-MID	Aliphatic Hydrocarbon Streams (Midrange)															
107-05-1	Allyl chloride															
7429-90-5	Aluminum															
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazol, 2-															
6109-97-3	Amino-9-ethylcarbazolehydrochloride, 3-															
117-79-3	Aminoanthraquinone, 2-															
7664-41-7	Ammonia															
62-53-3	Aniline															
191-26-4	Anthanthrene															
7440-36-0	Antimony															
ANTIMONY-COMPS	Antimony Compounds															
1309-64-4	Antimony trioxide															
140-57-8	Aramite															
7440-38-2	Arsenic			4.4961E-07	1.9693E-06	2.0964E-06	9.1823E-06			4.5882E-07	2.0096E-06	9.8039E-08	4.2941E-07	5.8824E-08		
ARSENIC-COMPS	Arsenic Compounds															
1327-53-3	Arsenic Trioxide															
7784-42-1	Arsine															
1332-21-4	Asbestos (units in fibers)															
1332-21-4-LAA	Asbestos, Libby Amphibole (units in fibers)															
123-77-3	Azodicarbonamide															
10294-40-3	Barium Chromate															
199-54-2	Benz[e]aceanthrylene															
202-33-5	Benz[j]aceanthrylene															

211-91-6 Benz[l]aceanthrylene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U57		SBLDGIA		NBLDGIA		STRU67		STRU68		STRU69		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
71-43-2	Benzene			4.7209E-06	2.0677E-05	2.2012E-05	9.6414E-05			4.8176E-06	2.1101E-05	1.0294E-06	4.5088E-06	6.1765E-07		
92-87-5	Benzidine															
205-82-3	Benzo(j)fluoranthene															
207-08-9	Benzo(k)fluoranthene															
56-55-3	Benzo[a]anthracene															
50-32-8	Benzo[a]pyrene															
205-99-2	Benzo[b]fluoranthene															
205-12-9	Benzo[c]fluorene															
191-24-2	Benzo[g,h,i]perylene															
65-85-0	Benzoic Acid															
100-44-7	Benzyl chloride															
7440-41-7	Beryllium			2.6976E-08	1.1816E-07	1.2578E-07	5.5094E-07			2.7529E-08	1.2058E-07	5.8824E-09	2.5765E-08	3.5294E-09		
BERYLLIUM-COMPS	Beryllium Compounds															
13510-49-1	Beryllium sulfate															
111-44-4	Bis(2-chloroethyl)ether															
117-81-7	Bis(2-ethylhexyl)phthalate (DEHP)															
542-88-1	Bis(chloromethyl)ether															
7440-42-8	Boron And Borates Only															
10294-34-5	Boron Trichloride															
7637-07-2	Boron Trifluoride															
108-86-1	Bromobenzene															
74-97-5	Bromochloromethane															
75-27-4	Bromodichloromethane															
75-25-2	Bromoform															
74-83-9	Bromomethane															
106-94-5	Bromopropane, 1-															
106-99-0	Butadiene, 1,3-															
78-92-2	Butyl alcohol, sec-															
111-76-2	Butyl Cellosolve (ethylene glycol monobutyl															
25013-16-5	Butylated hydroxyanisole															
3068-88-0	Butyrolactone, beta-															
7440-43-9	Cadmium			2.4728E-06	1.0831E-05	1.153E-05	5.0503E-05			2.5235E-06	1.1053E-05	5.3922E-07	2.3618E-06	3.2353E-07		
CADMIUM-COMPS	Cadmium Compounds															
13765-19-0	Calcium Chromate															
105-60-2	Caprolactum															
75-15-0	Carbon disulfide															
630-08-0	Carbon Monoxide			0.18883529	0.82709859	0.88049261	3.85655764			1.93E-01	8.44E-01	4.12E-02	1.80E-01	0.02470588		
56-23-5	Carbon tetrachloride															
463-58-1	Carbonyl sulfide															

111-15-9 Cellosolve Acetate (ethylene glycol monoet

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U57		SBLDGIA		NBLDGIA		STRU67		STRU68		STRU69		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
1306-38-3	Cerium Oxide and Cerium Compounds															
12789-03-6	Chlordane or (57-74-9)															
115-28-6	Chlorendic acid															
108171-26-2	Chlorinated Paraffins (C12, 60% Chlorine)															
7782-50-5	Chlorine															
10049-04-4	Chlorine Oxide (CLO2)															
75-68-3	Chloro-1,1-difluoroethane, 1- (HCFC-142b)															
563-47-3	Chloro-2-methylpropene, 3-															
95-83-0	Chloro-o-phenylenediamine, 4-															
95-69-2	Chloro-o-toluidine, p-															
532-27-4	Chloroacetophenone, 2-															
108-90-7	Chlorobenzene															
98-56-6	Chlorobenzotrifluoride, 4-															
75-45-6	Chlorodifluoromethane (HCFC-22)															
67-66-3	Chloroform															
107-30-2	Chloromethyl Methyl Ether															
88-73-3	Chloronitrobenzene, o-															
100-00-5	Chloronitrobenzene, p-															
76-06-2	Chloropicrin															
126-99-8	Chloroprene															
1333-82-0	Chromic acid mists and dissolved Cr(VI) ae															
7440-47-3	Chromium															
18540-29-9	Chromium (Hexavalent)			3.1473E-07	1.3785E-06	1.4675E-06	6.4276E-06			3.2118E-07	1.4068E-06	6.8627E-08	3.0059E-07	4.1176E-08		
18540-29-9-pm	Chromium (Hexavalent) - Particulate															
CHROM-COMPS	Chromium Compounds															
16065-83-1	Chromium(III) Compounds			2.8325E-06	1.2406E-05	1.3207E-05	5.7848E-05			2.8906E-06	1.2661E-05	6.1765E-07	2.7053E-06	3.7059E-07		
218-01-9	Chrysene (Benzo(a)phenanthrene)															
87-29-6	Cinnamyl anthranilate															
10061-01-5	cis-1,3-Dichloropropene															
8007-45-2	Coal Tar															
7440-48-4	Cobalt			1.8884E-07	8.271E-07	8.8049E-07	3.8566E-06			1.9271E-07	8.4405E-07	4.1176E-08	1.8035E-07	2.4706E-08		
0-00-7	Coke Oven Emissions															
7440-50-8	Copper															
COPPER-COMPS	Copper Compounds															
120-71-8	Cresidine, p-															
108-39-4	Cresol, m-															
95-48-7	Cresol, o-															
106-44-5	Cresol, p-															
1319-77-3	Cresols/Cresylic acid (isomers and mixture)															

98-82-8 Cumene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U57		SBLDGIA		NBLDGIA		STRU67		STRU68		STRU69		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
135-20-6	Cupferron															
57-12-5	Cyanide (Cyanide ion, Inorganic cyanides, I															
CYANIDE-COMPS	Cyanide Compounds															
110-82-7	Cyclohexane															
108-94-1	Cyclohexanone															
27208-37-3	Cyclopenta[c,d]pyrene															
50-29-3	DDT															
615-05-4	Diaminoanisole, 2,4-															
101-80-4	Diaminodiphenyl ether, 4,4-															
103-33-3	Diazene, Diphenyl															
226-36-8	Dibenz(a,h)acridine															
224-42-0	Dibenz(a,j)acridine															
53-70-3	Dibenz[a,h]anthracene															
192-65-4	Dibenzo(a,e)pyrene															
189-64-0	Dibenzo(a,h)pyrene															
191-30-0	Dibenzo(a,l)pyrene															
194-59-2	Dibenzo(c,g)carbazole, 7H-															
5385-75-1	Dibenzo[a,e]fluoranthene															
189-55-9	Dibenzo[a,i]pyrene															
96-12-8	Dibromo-3-chloropropane, 1,2-															
764-41-0	Dichloro-2-butene, 1,4-															
1476-11-5	Dichloro-2-butene, cis-1,4-															
106-46-7	Dichlorobenzene(p), 1,4-															
25321-22-6	Dichlorobenzenes			2.6976E-06	1.1816E-05	1.2578E-05	5.5094E-05				2.7529E-06	1.2058E-05	5.8824E-07	2.5765E-06	3.5294E-07	
91-94-1	Dichlorobenzidene, 3,3-															
75-71-8	Dichlorodifluoromethane (CFC-12)															
75-35-4	Dichloroethylene (1,1-) (Vinylidene chloride)															
156-60-5	Dichloroethylene, trans-1,2-		8.37E-04													
542-75-6	Dichloropropene, 1,3-															
78-88-6	Dichloropropene, 2,3-															
62-73-7	Dichlorvos															
77-73-6	Dicyclopentadiene															
60-57-1	Dieldrin															
0-02-4	Diesel exhaust particulate															
111-42-2	Diethanolamine															
112-34-5	Diethylene Glycol Monobutyl Ether															
111-90-0	Diethylene Glycol Monoethyl Ether															
75-37-6	Difluoroethane, 1,1-															
108-20-3	Diisopropyl Ether															

60-11-7 Dimethyl aminoazobenzene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U57		SBLDGIA		NBLDGIA		STRU67		STRU68		STRU69		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
68-12-2	Dimethyl formamide															
108-01-0	Dimethylamino ethanol, 2-															
57-97-6	Dimethylbenz[a]anthracene, 7,12-															
57-14-7	Dimethylhydrazine, 1,1-															
42397-64-8	Dinitropyrene, 1,6- (BaP)															
42397-65-9	Dinitropyrene, 1,8- (BaP)															
121-14-2	Dinitrotoluene, 2,4-															
123-91-1	Dioxane, 1,4- (1,4-Diethylene dioxide)															
122-66-7	Diphenylhydrazine, 1,2-															
106-89-8	Epichlorohydrin (l-Chloro-2,3-epoxypropane															
106-88-7	Epoxybutane, 1,2-															
110-80-5	Ethoxyethanol, 2- (ethylene glycol monoeth															
141-78-6	Ethyl acetate															
140-88-5	Ethyl Acrylate															
100-41-4	Ethyl benzene															
51-79-6	Ethyl carbamate (Urethane)															
75-00-3	Ethyl chloride (Chloroethane)															
97-63-2	Ethyl Methacrylate															
106-93-4	Ethylene dibromide (Dibromoethane)															
107-06-2	Ethylene dichloride (1,2-Dichloroethane)															
107-21-1	Ethylene glycol															
75-21-8	Ethylene oxide															
96-45-7	Ethylene thiourea															
75-34-3	Ethylidene dichloride (1,1-Dichloroethane)															
206-44-0	Fluoranthene															
FLUORIDES	Fluorides (except hydrogen fluoride)															
50-00-0	Formaldehyde			0.0001686	0.00073848	0.00078615	0.00344336				0.00017206	0.00075362	3.6765E-05	0.00016103	2.2059E-05	
64-18-6	Formic Acid															
111-30-8	Glutaraldehyde															
0-01-2	Glycol ethers															
76-44-8	Heptachlor															
1024-57-3	Heptachlor epoxide															
35822-46-9	Heptachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8-															
00-08-5	Heptachlorodibenzodioxin, All Isomers															
67562-39-4	Heptachlorodibenzofuran, 1,2,3,4,6,7,8-															
55673-89-7	Heptachlorodibenzofuran, 1,2,3,4,7,8,9-															
00-08-4	Heptachlorodibenzofuran, All Isomers															
142-82-5	Heptane, N															
118-74-1	Hexachlorobenzene															

87-68-3 Hexachlorobutadiene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U57		SBLDGIA		NBLDGIA		STRU67		STRU68		STRU69		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
608-73-1	Hexachlorocyclohexane (technical grade)															
319-84-6	Hexachlorocyclohexane, alpha-															
319-85-7	Hexachlorocyclohexane, beta-1,2,3,4,5,6-															
77-47-4	Hexachlorocyclopentadiene															
39227-28-6	Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-															
57653-85-7	Hexachlorodibenzo-p-dioxin, 1,2,3,6,7,8-															
19408-74-3	Hexachlorodibenzo-p-dioxin, 1,2,3,7,8,9-															
00-08-3	Hexachlorodibenzodioxins, All Isomers															
70648-26-9	Hexachlorodibenzofuran, 1,2,3,4,7,8-															
57117-44-9	Hexachlorodibenzofuran, 1,2,3,6,7,8-															
72918-21-9	Hexachlorodibenzofuran, 1,2,3,7,8,9-															
60851-34-5	Hexachlorodibenzofuran, 2,3,4,6,7,8-															
00-08-2	Hexachlorodibenzofurans, All Isomers															
67-72-1	Hexachloroethane															
822-06-0	Hexamethylene-1,6-diisocyanate															
110-54-3	Hexane			0.00404647	0.01772354	0.0188677	0.08264052			0.00412941	0.01808682	0.00088235	0.00386471	0.00052941		
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl-1-hexanol)															
591-78-6	Hexanone-2															
302-01-2	Hydrazine															
10034-93-2	Hydrazine sulfate															
7647-01-0	Hydrochloric acid (hydrogen chloride)															
74-90-8	Hydrogen cyanide															
7664-39-3	Hydrogen fluoride (Hydrofluoric acid)															
7783-07-5	Hydrogen selenide															
7783-06-4	Hydrogen sulfide															
193-39-5	Indeno(1,2,3-cd)pyrene															
5888-33-5	Isobornyl acrylate															
78-59-1	Isophorone															
67-63-0	Isopropyl alcohol															
7439-92-1	Lead															
7758-97-6	Lead Chromate															
LEAD-COMPS	Lead Compounds															
58-89-9	Lindane (all isomers)															
108-31-6	Maleic anhydride															
7439-96-5	Manganese			8.5425E-07	3.7416E-06	3.9832E-06	1.7446E-05			8.7176E-07	3.8183E-06	1.8627E-07	8.1588E-07	1.1176E-07		
MANGANESE-COMP	Manganese Compounds															
7439-97-6	Mercury (elemental)			5.8449E-07	2.5601E-06	2.7253E-06	1.1937E-05			5.9647E-07	2.6125E-06	1.2745E-07	5.5824E-07	7.6471E-08		
MERCURY-COMPS	Mercury Compounds															
126-98-7	Methacrylonitrile															

67-56-1 Methanol

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U57		SBLDGIA		NBLDGIA		STRU67		STRU68		STRU69		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
109-86-4	Methoxyethanol, 2- (ethylene glycol monom															
96-33-3	Methyl acrylate															
110-49-6	Methyl Cellosolve Acetate															
74-87-3	Methyl chloride (Chloromethane)															
71-55-6	Methyl chloroform (1,1,1-Trichloroethane)															
78-93-3	Methyl ethyl ketone (2-Butanone)															
60-34-4	Methyl Hydrazine															
108-10-1	Methyl isobutyl ketone (Hexone)															
624-83-9	Methyl isocyanate															
80-62-6	Methyl methacrylate															
1634-04-4	Methyl tert butyl ether															
56-49-5	Methylcholanthrene, 3-															
3697-24-3	Methylchrysene, 5-															
101-14-4	Methylene bis(2-chloroaniline), 4,4-															
74-95-3	Methylene Bromide															
75-09-2	Methylene chloride (Dichloromethane)															
101-68-8	Methylene diphenyl diisocyanate (MDI)															
101-77-9	Methylenedianiline, 4,4-															
90-94-8	Michler's ketone															
10595-95-6	N- Nitrosomethylethylamine															
924-16-3	N-Nitrosodi-n-butylamine															
621-64-7	N-Nitrosodi-n-propylamine															
55-18-5	N-Nitrosodiethylamine															
62-75-9	N-Nitrosodimethylamine															
86-30-6	N-Nitrosodiphenylamine															
59-89-2	N-Nitrosomorpholine															
100-75-4	N-Nitrosopiperidine															
111-84-2	N-Nonane															
64724-95-6	Naphtha, High Flash Aromatic (HFAN)															
91-20-3	Naphthalene			1.3713E-06	6.0063E-06	6.3941E-06	2.8006E-05				1.3994E-06	6.1294E-06	2.9902E-07	1.3097E-06	1.7941E-07	
193-09-9	Naphtho[2,3-e]pyrene															
7440-02-0	Nickel			4.7209E-06	2.0677E-05	2.2012E-05	9.6414E-05				4.8176E-06	2.1101E-05	1.0294E-06	4.5088E-06	6.1765E-07	
NICKEL-COMPS	Nickel Compounds															
1313-99-1	Nickel oxide															
0-02-5	Nickel refinery dust from the pyrometallurgic															
12035-72-2	Nickel sulfide (NI3S2)															
7697-37-2	Nitric acid															
139-13-9	Nitrilotriacetic acid															
18662-53-8	Nitrilotriacetic acid, trisodium salt monohydr															

602-87-9 Nitroacenaphthene, 5-

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U57		SBLDGIA		NBLDGIA		STRU67		STRU68		STRU69		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
88-74-4	Nitroaniline, 2-															
100-01-6	Nitroaniline, 4-															
98-95-3	Nitrobenzene															
7496-02-8	Nitrochrysene, 6-															
607-57-8	Nitrofluorene, 2-															
10102-44-0	Nitrogen dioxide (NO2)			0.22480392	0.98464118	1.04820549	4.59114005			2.29E-01	1.00E+00	4.90E-02	2.15E-01	0.02941176		
75-52-5	Nitromethane															
79-46-9	Nitropropane, 2-															
5522-43-0	Nitropyrene, 1-															
57835-92-4	Nitropyrene, 4-															
156-10-5	Nitrosodiphenylamine, p-															
3268-87-9	Octachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8,9-															
39001-02-0	Octachlorodibenzofuran, 1,2,3,4,6,7,8,9-															
10028-15-6	Ozone															
74472-37-0	PCB 114 (2,3,4,4,5 Pentachlorobiphenyl)															
31508-00-6	PCB 118 (2,3,4,4,5 Pentachlorobiphenyl)															
65510-44-3	PCB 123 (2,3,4,4,5 Pentachlorobiphenyl)															
57465-28-8	PCB 126 (3,3,4,4,5 Pentachlorobiphenyl)															
38380-0804	PCB 156 (2,3,3,4,4,5 Hexachlorobiphenyl)															
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexachlorobiphenyl)															
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexachlorobiphenyl)															
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexachlorobiphenyl)															
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Heptachlorobipheny															
32598-13-3	PCB 77 (3,3,4,4-Tetrachlorobiphenyl)															
70362-50-4	PCB 81 (3,4,4,5 Tetrachlorobiphenyl)															
32598-14-4	PCB105 (2,3,3,4,4 Pentachlorobiphenyl)															
40321-76-4	Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-															
00-08-1	Pentachlorodibenzodioxins, All Isomers															
57117-41-6	Pentachlorodibenzofuran, 1,2,3,7,8-															
57117-31-4	Pentachlorodibenzofuran, 2,3,4,7,8-															
00-09-0	Pentachlorodibenzofurans, All Isomers															
87-86-5	Pentachlorophenol															
109-66-0	Pentane, n-															
ALIPHATIC-C5-C8	Petroleum Hydrocarbons, Aliphatic Low (C5															
ALIPHATIC-C9-C18	Petroleum Hydrocarbons, Aliphatic Medium															
AROMATIC-C6-C8	Petroleum Hydrocarbons, Aromatic Low (C6															
AROMATIC-C9-C16	Petroleum Hydrocarbons, Aromatic Medium															
85-01-8	Phenanthrene															
108-95-2	Phenol															

75-44-5 Phosgene

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U57		SBLDGIA		NBLDGIA		STRU67		STRU68		STRU69		STR
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
7803-51-2	Phosphine															
7664-38-2	Phosphoric acid															
85-44-9	Phthalic anhydride															
59536-65-1	Polybrominated Biphenyls															
1336-36-3	Polychlorinated biphenyls (Aroclors unspeci															
00-08-0	Polychlorinated Dibenzo-P-Dioxins And Fur															
00-05-0	Polychlorinated Dibenzodioxins, Total															
00-05-1	Polychlorinated Dibenzofurans, Total															
130498-29-2	Polycyclic Aromatic Hydrocarbons (PAH)															
00-01-7	Polycyclic Organic Matter (POM)			1.9828E-07	8.6845E-07	9.2452E-07	4.0494E-06			2.0234E-07	8.8625E-07	4.3235E-08	1.8937E-07	2.5941E-08		
9016-87-9	Polymeric diphenylmethane diisocyanate															
7758-01-2	Potassium bromate															
1120-71-4	Propane sultone, 1,3-															
57-57-8	Propiolactone, beta-															
123-38-6	Propionaldehyde															
115-07-1	Propylene															
78-87-5	Propylene dichloride (1,2-Dichloropropane)															
107-98-2	Propylene Glycol Monomethyl Ether															
75-56-9	Propylene oxide															
930-55-2	Pyrrolidine, 1-Nitroso-															
7782-49-2	Selenium			5.3953E-08	2.3631E-07	2.5157E-07	1.1019E-06			5.5059E-08	2.4116E-07	1.1765E-08	5.1529E-08	7.0588E-09		
0-01-9	Selenium Compounds															
7631-86-9	Silica (crystalline, respirable, PM4)															
1310-73-2	Sodium hydroxide															
10588-01-9	Sodium Dichromate															
7789-06-2	Strontium chromate															
100-42-5	Styrene															
96-09-3	Styrene oxide															
14808-79-8	Sulfates															
126-33-0	Sulfolane															
7446-09-5	Sulfur dioxide			0.00134882	0.00590785	0.00628923	0.02754684			1.38E-03	6.03E-03	2.94E-04	1.29E-03	0.00017647		
7664-93-9	Sulfuric acid (aerosol forms only)															
8014-95-7	Sulfuric Acid mixture w. sulfur trioxide (oleu															
00-09-1	TCDD Eqivalents, 2,3,7,8-															
540-88-5	Tert-Butyl Acetate															
1746-01-6	Tetrachlorodibenzo-p-dioxin, 2,3,7,8-															
00-08-8	Tetrachlorodibenzodioxins, All Isomers															
51207-31-9	Tetrachlorodibenzofuran, 2,3,7,8-															
00-08-6	Tetrachlorodibenzofurans, All Isomers															

630-20-6 Tetrachloroethane, 1,1,1,2-

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U57		SBLDGIA		NBLDGIA		STRU67		STRU68		STRU69		STR	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)
79-34-5	Tetrachloroethane, 1,1,2,2-															
127-18-4	Tetrachloroethylene (Perchloroethylene)															
811-97-2	Tetrafluoroethane, 1,1,1,2-															
109-99-9	Tetrahydrofuran															
62-55-5	Thioacetamide															
62-56-6	Thiourea															
108-88-3	Toluene			7.6433E-06	3.3478E-05	3.5639E-05	0.0001561			0.0000078	3.4164E-05	1.6667E-06	0.0000073	0.000001		
584-84-9	Toluene-2,4-diisocyanate															
91-08-7	Toluene-2,6-diisocyanate															
95-80-7	Toluene diamine, 2,4-															
26471-62-5	Toluenediisocyanate (mixed isomers)															
95-53-4	Toluidine, o- (Methylaniline, 2-)															
8001-35-2	Toxaphene (chlorinated camphene)															
10061-02-6	trans-1,3-Dichloropropene															
120-82-1	Trichlorobenzene, 1,2,4-															
79-00-5	Trichloroethane, 1,1,2-															
79-01-6	Trichloroethylene (TCE)															
75-69-4	Trichlorofluoromethane (CFC-11)															
88-06-2	Trichlorophenol, 2,4,6-															
96-18-4	Trichloropropane, 1,2,3-															
96-19-5	Trichloropropene, 1,2,3-															
76-13-1	Trichlorotrifluoroethane, 1,1,2- (CFC-13)															
121-44-8	Triethylamine															
420-46-2	Trifluoroethane, 1,1,1-															
526-73-8	Trimethylbenzene, 1,2,3-															
95-63-6	Trimethylbenzene, 1,2,4-															
108-67-8	Trimethylbenzene, 1,3,5-															
URANIUM-SOLUBLE	Uranium (Soluble Salts)															
7440-61-1	Uranium, Insoluble Compounds															
7440-62-2	Vanadium and Compounds															
1314-62-1	Vanadium Pentoxide, (V2O5)															
108-05-4	Vinyl acetate															
593-60-2	Vinyl bromide															
75-01-4	Vinyl chloride															
1330-20-7	Xylenes															
108-38-3	Xylenes, m-															
95-47-6	Xylenes, o-															
106-42-3	Xylenes, p-															
13530-65-9	Zinc chromate															

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U70	STRU71		STRU72	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
202-94-8	11H-Benz[b,c]aceanthrylene						
202-98-2	4H-Cyclopenta[d,e,f]chrysene						
75-07-0	Acetaldehyde						
60-35-5	Acetamide						
67-64-1	Acetone						
75-86-5	Acetone Cyanohydrin						
75-05-8	Acetonitrile						
53-96-3	Acetylaminofluorene, 2-						
107-02-8	Acrolein						
79-06-1	Acrylamide						
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-nitro-2-furyl)-						
79-10-7	Acrylic acid						
107-13-1	Acrylonitrile						
111-69-3	Adiponitrile						
ALDEHYDES	Aldehydes						
309-00-2	Aldrin						
ALIPHATIC-MID	Aliphatic Hydrocarbon Streams (Midrange)						
107-05-1	Allyl chloride						
7429-90-5	Aluminum						
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazol, 2-						
6109-97-3	Amino-9-ethylcarbazolehydrochloride, 3-						
117-79-3	Aminoanthraquinone, 2-						
7664-41-7	Ammonia						
62-53-3	Aniline						
191-26-4	Anthanthrene						
7440-36-0	Antimony						
ANTIMONY-COMPS	Antimony Compounds						
1309-64-4	Antimony trioxide						
140-57-8	Aramite						
7440-38-2	Arsenic		2.5765E-07				
ARSENIC-COMPS	Arsenic Compounds						
1327-53-3	Arsenic Trioxide						
7784-42-1	Arsine						
1332-21-4	Asbestos (units in fibers)						
1332-21-4-LAA	Asbestos, Libby Amphibole (units in fibers)						
123-77-3	Azodicarbonamide						
10294-40-3	Barium Chromate						
199-54-2	Benz[e]aceanthrylene						
202-33-5	Benz[j]aceanthrylene						
211-91-6	Benz[l]aceanthrylene						

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U70	STRU71		STRU72	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
71-43-2	Benzene		2.7053E-06				
92-87-5	Benzidine						
205-82-3	Benzo(j)fluoranthene						
207-08-9	Benzo(k)fluoranthene						
56-55-3	Benzo[a]anthracene						
50-32-8	Benzo[a]pyrene						
205-99-2	Benzo[b]fluoranthene						
205-12-9	Benzo[c]fluorene						
191-24-2	Benzo[g,h,i]perylene						
65-85-0	Benzoic Acid						
100-44-7	Benzyl chloride						
7440-41-7	Beryllium		1.5459E-08				
BERYLLIUM-COMPS	Beryllium Compounds						
13510-49-1	Beryllium sulfate						
111-44-4	Bis(2-chloroethyl)ether						
117-81-7	Bis(2-ethylhexyl)phthalate (DEHP)						
542-88-1	Bis(chloromethyl)ether						
7440-42-8	Boron And Borates Only						
10294-34-5	Boron Trichloride						
7637-07-2	Boron Trifluoride						
108-86-1	Bromobenzene						
74-97-5	Bromochloromethane						
75-27-4	Bromodichloromethane						
75-25-2	Bromoform						
74-83-9	Bromomethane						
106-94-5	Bromopropane, 1-						
106-99-0	Butadiene, 1,3-						
78-92-2	Butyl alcohol, sec-						
111-76-2	Butyl Cellosolve (ethylene glycol monobutyl						
25013-16-5	Butylated hydroxyanisole						
3068-88-0	Butyrolactone, beta-						
7440-43-9	Cadmium		1.4171E-06				
CADMIUM-COMPS	Cadmium Compounds						
13765-19-0	Calcium Chromate						
105-60-2	Caprolactum						
75-15-0	Carbon disulfide						
630-08-0	Carbon Monoxide		0.10821176				
56-23-5	Carbon tetrachloride						
463-58-1	Carbonyl sulfide						
111-15-9	Cellosolve Acetate (ethylene glycol monoet						

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U70	STRU71		STRU72	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
1306-38-3	Cerium Oxide and Cerium Compounds						
12789-03-6	Chlordane or (57-74-9)						
115-28-6	Chlorendic acid						
108171-26-2	Chlorinated Paraffins (C12, 60% Chlorine)						
7782-50-5	Chlorine						
10049-04-4	Chlorine Oxide (CLO2)						
75-68-3	Chloro-1,1-difluoroethane, 1- (HCFC-142b)						
563-47-3	Chloro-2-methylpropene, 3-						
95-83-0	Chloro-o-phenylenediamine, 4-						
95-69-2	Chloro-o-toluidine, p-						
532-27-4	Chloroacetophenone, 2-						
108-90-7	Chlorobenzene						
98-56-6	Chlorobenzotrifluoride, 4-						
75-45-6	Chlorodifluoromethane (HCFC-22)						
67-66-3	Chloroform						
107-30-2	Chloromethyl Methyl Ether						
88-73-3	Chloronitrobenzene, o-						
100-00-5	Chloronitrobenzene, p-						
76-06-2	Chloropicrin						
126-99-8	Chloroprene						
1333-82-0	Chromic acid mists and dissolved Cr(VI) ae						
7440-47-3	Chromium						
18540-29-9	Chromium (Hexavalent)		1.8035E-07				
18540-29-9-pm	Chromium (Hexavalent) - Particulate						
CHROM-COMPS	Chromium Compounds						
16065-83-1	Chromium(III) Compounds		1.6232E-06				
218-01-9	Chrysene (Benzo(a)phenanthrene)						
87-29-6	Cinnamyl anthranilate						
10061-01-5	cis-1,3-Dichloropropene						
8007-45-2	Coal Tar						
7440-48-4	Cobalt		1.0821E-07				
0-00-7	Coke Oven Emissions						
7440-50-8	Copper						
COPPER-COMPS	Copper Compounds						
120-71-8	Cresidine, p-						
108-39-4	Cresol, m-						
95-48-7	Cresol, o-						
106-44-5	Cresol, p-						
1319-77-3	Cresols/Cresylic acid (isomers and mixture)						
98-82-8	Cumene						

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U70	STRU71		STRU72	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
135-20-6	Cupferron						
57-12-5	Cyanide (Cyanide ion, Inorganic cyanides, I						
CYANIDE-COMPS	Cyanide Compounds						
110-82-7	Cyclohexane						
108-94-1	Cyclohexanone						
27208-37-3	Cyclopenta[c,d]pyrene						
50-29-3	DDT						
615-05-4	Diaminoanisole, 2,4-						
101-80-4	Diaminodiphenyl ether, 4,4-						
103-33-3	Diazene, Diphenyl						
226-36-8	Dibenz(a,h)acridine						
224-42-0	Dibenz(a,j)acridine						
53-70-3	Dibenz[a,h]anthracene						
192-65-4	Dibenzo(a,e)pyrene						
189-64-0	Dibenzo(a,h)pyrene						
191-30-0	Dibenzo(a,l)pyrene						
194-59-2	Dibenzo(c,g)carbazole, 7H-						
5385-75-1	Dibenzo[a,e]fluoranthene						
189-55-9	Dibenzo[a,i]pyrene						
96-12-8	Dibromo-3-chloropropane, 1,2-						
764-41-0	Dichloro-2-butene, 1,4-						
1476-11-5	Dichloro-2-butene, cis-1,4-						
106-46-7	Dichlorobenzene(p), 1,4-						
25321-22-6	Dichlorobenzenes		1.5459E-06				
91-94-1	Dichlorobenzidene, 3,3-						
75-71-8	Dichlorodifluoromethane (CFC-12)						
75-35-4	Dichloroethylene (1,1-) (Vinylidene chloride)						
156-60-5	Dichloroethylene, trans-1,2-						
542-75-6	Dichloropropene, 1,3-						
78-88-6	Dichloropropene, 2,3-						
62-73-7	Dichlorvos						
77-73-6	Dicyclopentadiene						
60-57-1	Dieldrin						
0-02-4	Diesel exhaust particulate						
111-42-2	Diethanolamine						
112-34-5	Diethylene Glycol Monobutyl Ether						
111-90-0	Diethylene Glycol Monoethyl Ether						
75-37-6	Difluoroethane, 1,1-						
108-20-3	Diisopropyl Ether						
60-11-7	Dimethyl aminoazobenzene						

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U70	STRU71		STRU72	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
68-12-2	Dimethyl formamide						
108-01-0	Dimethylamino ethanol, 2-						
57-97-6	Dimethylbenz[a]anthracene, 7,12-						
57-14-7	Dimethylhydrazine, 1,1-						
42397-64-8	Dinitropyrene, 1,6- (BaP)						
42397-65-9	Dinitropyrene, 1,8- (BaP)						
121-14-2	Dinitrotoluene, 2,4-						
123-91-1	Dioxane, 1,4- (1,4-Diethylene dioxide)						
122-66-7	Diphenylhydrazine, 1,2-						
106-89-8	Epichlorohydrin (l-Chloro-2,3-epoxypropane						
106-88-7	Epoxybutane, 1,2-						
110-80-5	Ethoxyethanol, 2- (ethylene glycol monoeth						
141-78-6	Ethyl acetate						
140-88-5	Ethyl Acrylate						
100-41-4	Ethyl benzene						
51-79-6	Ethyl carbamate (Urethane)						
75-00-3	Ethyl chloride (Chloroethane)						
97-63-2	Ethyl Methacrylate						
106-93-4	Ethylene dibromide (Dibromoethane)						
107-06-2	Ethylene dichloride (1,2-Dichloroethane)						
107-21-1	Ethylene glycol						
75-21-8	Ethylene oxide						
96-45-7	Ethylene thiourea						
75-34-3	Ethylidene dichloride (1,1-Dichloroethane)						
206-44-0	Fluoranthene						
FLUORIDES	Fluorides (except hydrogen fluoride)						
50-00-0	Formaldehyde		9.6618E-05				
64-18-6	Formic Acid						
111-30-8	Glutaraldehyde						
0-01-2	Glycol ethers						
76-44-8	Heptachlor						
1024-57-3	Heptachlor epoxide						
35822-46-9	Heptachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8-						
00-08-5	Heptachlorodibenzodioxin, All Isomers						
67562-39-4	Heptachlorodibenzofuran, 1,2,3,4,6,7,8-						
55673-89-7	Heptachlorodibenzofuran, 1,2,3,4,7,8,9-						
00-08-4	Heptachlorodibenzofuran, All Isomers						
142-82-5	Heptane, N						
118-74-1	Hexachlorobenzene						
87-68-3	Hexachlorobutadiene						

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U70	STRU71		STRU72	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
608-73-1	Hexachlorocyclohexane (technical grade)						
319-84-6	Hexachlorocyclohexane, alpha-						
319-85-7	Hexachlorocyclohexane, beta-1,2,3,4,5,6-						
77-47-4	Hexachlorocyclopentadiene						
39227-28-6	Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-						
57653-85-7	Hexachlorodibenzo-p-dioxin, 1,2,3,6,7,8-						
19408-74-3	Hexachlorodibenzo-p-dioxin, 1,2,3,7,8,9-						
00-08-3	Hexachlorodibenzodioxins, All Isomers						
70648-26-9	Hexachlorodibenzofuran, 1,2,3,4,7,8-						
57117-44-9	Hexachlorodibenzofuran, 1,2,3,6,7,8-						
72918-21-9	Hexachlorodibenzofuran, 1,2,3,7,8,9-						
60851-34-5	Hexachlorodibenzofuran, 2,3,4,6,7,8-						
00-08-2	Hexachlorodibenzofurans, All Isomers						
67-72-1	Hexachloroethane						
822-06-0	Hexamethylene-1,6-diisocyanate						
110-54-3	Hexane		0.00231882				
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl-1-hexanol)						
591-78-6	Hexanone-2						
302-01-2	Hydrazine						
10034-93-2	Hydrazine sulfate						
7647-01-0	Hydrochloric acid (hydrogen chloride)						
74-90-8	Hydrogen cyanide						
7664-39-3	Hydrogen fluoride (Hydrofluoric acid)						
7783-07-5	Hydrogen selenide						
7783-06-4	Hydrogen sulfide						
193-39-5	Indeno(1,2,3-cd)pyrene						
5888-33-5	Isobornyl acrylate					0.011616	0.05087808
78-59-1	Isophorone						
67-63-0	Isopropyl alcohol						
7439-92-1	Lead						
7758-97-6	Lead Chromate						
LEAD-COMPS	Lead Compounds						
58-89-9	Lindane (all isomers)						
108-31-6	Maleic anhydride						
7439-96-5	Manganese		4.8953E-07				
MANGANESE-COMP	Manganese Compounds						
7439-97-6	Mercury (elemental)		3.3494E-07				
MERCURY-COMPS	Mercury Compounds						
126-98-7	Methacrylonitrile						
67-56-1	Methanol						

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U70	STRU71		STRU72	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
109-86-4	Methoxyethanol, 2- (ethylene glycol monom						
96-33-3	Methyl acrylate						
110-49-6	Methyl Cellosolve Acetate						
74-87-3	Methyl chloride (Chloromethane)						
71-55-6	Methyl chloroform (1,1,1-Trichloroethane)						
78-93-3	Methyl ethyl ketone (2-Butanone)						
60-34-4	Methyl Hydrazine						
108-10-1	Methyl isobutyl ketone (Hexone)						
624-83-9	Methyl isocyanate						
80-62-6	Methyl methacrylate						
1634-04-4	Methyl tert butyl ether						
56-49-5	Methylcholanthrene, 3-						
3697-24-3	Methylchrysene, 5-						
101-14-4	Methylene bis(2-chloroaniline), 4,4-						
74-95-3	Methylene Bromide						
75-09-2	Methylene chloride (Dichloromethane)						
101-68-8	Methylene diphenyl diisocyanate (MDI)						
101-77-9	Methylenedianiline, 4,4-						
90-94-8	Michler's ketone						
10595-95-6	N- Nitrosomethylethylamine						
924-16-3	N-Nitrosodi-n-butylamine						
621-64-7	N-Nitrosodi-n-propylamine						
55-18-5	N-Nitrosodiethylamine						
62-75-9	N-Nitrosodimethylamine						
86-30-6	N-Nitrosodiphenylamine						
59-89-2	N-Nitrosomorpholine						
100-75-4	N-Nitrosopiperidine						
111-84-2	N-Nonane						
64724-95-6	Naphtha, High Flash Aromatic (HFAN)						
91-20-3	Naphthalene		7.8582E-07				
193-09-9	Naphtho[2,3-e]pyrene						
7440-02-0	Nickel		2.7053E-06				
NICKEL-COMPS	Nickel Compounds						
1313-99-1	Nickel oxide						
0-02-5	Nickel refinery dust from the pyrometallurgic						
12035-72-2	Nickel sulfide (NI3S2)						
7697-37-2	Nitric acid						
139-13-9	Nitrilotriacetic acid						
18662-53-8	Nitrilotriacetic acid, trisodium salt monohydr						
602-87-9	Nitroacenaphthene, 5-						

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U70	STRU71		STRU72	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
88-74-4	Nitroaniline, 2-						
100-01-6	Nitroaniline, 4-						
98-95-3	Nitrobenzene						
7496-02-8	Nitrochrysene, 6-						
607-57-8	Nitrofluorene, 2-						
10102-44-0	Nitrogen dioxide (NO2)		0.12882353				
75-52-5	Nitromethane						
79-46-9	Nitropropane, 2-						
5522-43-0	Nitropyrene, 1-						
57835-92-4	Nitropyrene, 4-						
156-10-5	Nitrosodiphenylamine, p-						
3268-87-9	Octachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8,9-						
39001-02-0	Octachlorodibenzofuran, 1,2,3,4,6,7,8,9-						
10028-15-6	Ozone						
74472-37-0	PCB 114 (2,3,4,4,5 Pentachlorobiphenyl)						
31508-00-6	PCB 118 (2,3,4,4,5 Pentachlorobiphenyl)						
65510-44-3	PCB 123 (2,3,4,4,5 Pentachlorobiphenyl)						
57465-28-8	PCB 126 (3,3,4,4,5 Pentachlorobiphenyl)						
38380-0804	PCB 156 (2,3,3,4,4,5 Hexachlorobiphenyl)						
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexachlorobiphenyl)						
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexachlorobiphenyl)						
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexachlorobiphenyl)						
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Heptachlorobipheny						
32598-13-3	PCB 77 (3,3,4,4-Tetrachlorobiphenyl)						
70362-50-4	PCB 81 (3,4,4,5 Tetrachlorobiphenyl)						
32598-14-4	PCB105 (2,3,3,4,4 Pentachlorobiphenyl)						
40321-76-4	Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-						
00-08-1	Pentachlorodibenzodioxins, All Isomers						
57117-41-6	Pentachlorodibenzofuran, 1,2,3,7,8-						
57117-31-4	Pentachlorodibenzofuran, 2,3,4,7,8-						
00-09-0	Pentachlorodibenzofurans, All Isomers						
87-86-5	Pentachlorophenol						
109-66-0	Pentane, n-						
ALIPHATIC-C5-C8	Petroleum Hydrocarbons, Aliphatic Low (C5						
ALIPHATIC-C9-C18	Petroleum Hydrocarbons, Aliphatic Medium			0.03348205	0.14665136		
AROMATIC-C6-C8	Petroleum Hydrocarbons, Aromatic Low (C						
AROMATIC-C9-C16	Petroleum Hydrocarbons, Aromatic Medium						
85-01-8	Phenanthrene						
108-95-2	Phenol						
75-44-5	Phosgene						

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U70	STRU71		STRU72	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
7803-51-2	Phosphine						
7664-38-2	Phosphoric acid						
85-44-9	Phthalic anhydride						
59536-65-1	Polybrominated Biphenyls						
1336-36-3	Polychlorinated biphenyls (Aroclors unspeci						
00-08-0	Polychlorinated Dibenzo-P-Dioxins And Fur						
00-05-0	Polychlorinated Dibenzodioxins, Total						
00-05-1	Polychlorinated Dibenzofurans, Total						
130498-29-2	Polycyclic Aromatic Hydrocarbons (PAH)						
00-01-7	Polycyclic Organic Matter (POM)		1.1362E-07				
9016-87-9	Polymeric diphenylmethane diisocyanate						
7758-01-2	Potassium bromate						
1120-71-4	Propane sultone, 1,3-						
57-57-8	Propiolactone, beta-						
123-38-6	Propionaldehyde						
115-07-1	Propylene						
78-87-5	Propylene dichloride (1,2-Dichloropropane)						
107-98-2	Propylene Glycol Monomethyl Ether						
75-56-9	Propylene oxide						
930-55-2	Pyrrolidine, 1-Nitroso-						
7782-49-2	Selenium		3.0918E-08				
0-01-9	Selenium Compounds						
7631-86-9	Silica (crystalline, respirable, PM4)						
1310-73-2	Sodium hydroxide						
10588-01-9	Sodium Dichromate						
7789-06-2	Strontium chromate						
100-42-5	Styrene						
96-09-3	Styrene oxide						
14808-79-8	Sulfates						
126-33-0	Sulfolane						
7446-09-5	Sulfur dioxide		0.00077294				
7664-93-9	Sulfuric acid (aerosol forms only)						
8014-95-7	Sulfuric Acid mixture w. sulfur trioxide (oleu						
00-09-1	TCDD Eqivalents, 2,3,7,8-						
540-88-5	Tert-Butyl Acetate						
1746-01-6	Tetrachlorodibenzo-p-dioxin, 2,3,7,8-						
00-08-8	Tetrachlorodibenzodioxins, All Isomers						
51207-31-9	Tetrachlorodibenzofuran, 2,3,7,8-						
00-08-6	Tetrachlorodibenzofurans, All Isomers						
630-20-6	Tetrachloroethane, 1,1,1,2-						

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name		U70	STRU71		STRU72	
			Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
79-34-5	Tetrachloroethane, 1,1,2,2-						
127-18-4	Tetrachloroethylene (Perchloroethylene)						
811-97-2	Tetrafluoroethane, 1,1,1,2-						
109-99-9	Tetrahydrofuran						
62-55-5	Thioacetamide						
62-56-6	Thiourea						
108-88-3	Toluene		0.00000438				
584-84-9	Toluene-2,4-diisocyanate						
91-08-7	Toluene-2,6-diisocyanate						
95-80-7	Toluene diamine, 2,4-						
26471-62-5	Toluenediisocyanate (mixed isomers)						
95-53-4	Toluidine, o- (Methylaniline, 2-)						
8001-35-2	Toxaphene (chlorinated camphene)						
10061-02-6	trans-1,3-Dichloropropene						
120-82-1	Trichlorobenzene, 1,2,4-						
79-00-5	Trichloroethane, 1,1,2-						
79-01-6	Trichloroethylene (TCE)						
75-69-4	Trichlorofluoromethane (CFC-11)						
88-06-2	Trichlorophenol, 2,4,6-						
96-18-4	Trichloropropane, 1,2,3-						
96-19-5	Trichloropropene, 1,2,3-						
76-13-1	Trichlorotrifluoroethane, 1,1,2- (CFC-13)						
121-44-8	Triethylamine						
420-46-2	Trifluoroethane, 1,1,1-						
526-73-8	Trimethylbenzene, 1,2,3-						
95-63-6	Trimethylbenzene, 1,2,4-						
108-67-8	Trimethylbenzene, 1,3,5-						
URANIUM-SOLUBLE	Uranium (Soluble Salts)						
7440-61-1	Uranium, Insoluble Compounds						
7440-62-2	Vanadium and Compounds						
1314-62-1	Vanadium Pentoxide, (V2O5)						
108-05-4	Vinyl acetate						
593-60-2	Vinyl bromide						
75-01-4	Vinyl chloride						
1330-20-7	Xylenes						
108-38-3	Xylenes, m-						
95-47-6	Xylenes, o-						
106-42-3	Xylenes, p-						
13530-65-9	Zinc chromate						

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name	
202-94-8	11H-Benz[b,c]aceanthrylene	
202-98-2	4H-Cyclopenta[d,e,f]chrysene	
75-07-0	Acetaldehyde	
60-35-5	Acetamide	
67-64-1	Acetone	
75-86-5	Acetone Cyanohydrin	
75-05-8	Acetonitrile	
53-96-3	Acetylaminofluorene, 2-	
107-02-8	Acrolein	
79-06-1	Acrylamide	
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-nitro-2-furyl)-	
79-10-7	Acrylic acid	
107-13-1	Acrylonitrile	
111-69-3	Adiponitrile	
ALDEHYDES	Aldehydes	
309-00-2	Aldrin	
ALIPHATIC-MID	Aliphatic Hydrocarbon Streams (Midrange)	
107-05-1	Allyl chloride	
7429-90-5	Aluminum	
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazol, 2-	
6109-97-3	Amino-9-ethylcarbazolehydrochloride, 3-	
117-79-3	Aminoanthraquinone, 2-	
7664-41-7	Ammonia	
62-53-3	Aniline	
191-26-4	Anthanthrene	
7440-36-0	Antimony	
ANTIMONY-COMPS	Antimony Compounds	
1309-64-4	Antimony trioxide	
140-57-8	Aramite	
7440-38-2	Arsenic	
ARSENIC-COMPS	Arsenic Compounds	
1327-53-3	Arsenic Trioxide	
7784-42-1	Arsine	
1332-21-4	Asbestos (units in fibers)	
1332-21-4-LAA	Asbestos, Libby Amphibole (units in fibers)	
123-77-3	Azodicarbonamide	
10294-40-3	Barium Chromate	
199-54-2	Benz[e]aceanthrylene	
202-33-5	Benz[j]aceanthrylene	
211-91-6	Benz[l]aceanthrylene	

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name	
71-43-2	Benzene	
92-87-5	Benzidine	
205-82-3	Benzo(j)fluoranthene	
207-08-9	Benzo(k)fluoranthene	
56-55-3	Benzo[a]anthracene	
50-32-8	Benzo[a]pyrene	
205-99-2	Benzo[b]fluoranthene	
205-12-9	Benzo[c]fluorene	
191-24-2	Benzo[g,h,i]perylene	
65-85-0	Benzoic Acid	
100-44-7	Benzyl chloride	
7440-41-7	Beryllium	
BERYLLIUM-COMPS	Beryllium Compounds	
13510-49-1	Beryllium sulfate	
111-44-4	Bis(2-chloroethyl)ether	
117-81-7	Bis(2-ethylhexyl)phthalate (DEHP)	
542-88-1	Bis(chloromethyl)ether	
7440-42-8	Boron And Borates Only	
10294-34-5	Boron Trichloride	
7637-07-2	Boron Trifluoride	
108-86-1	Bromobenzene	
74-97-5	Bromochloromethane	
75-27-4	Bromodichloromethane	
75-25-2	Bromoform	
74-83-9	Bromomethane	
106-94-5	Bromopropane, 1-	
106-99-0	Butadiene, 1,3-	
78-92-2	Butyl alcohol, sec-	
111-76-2	Butyl Cellosolve (ethylene glycol monobutyl	
25013-16-5	Butylated hydroxyanisole	
3068-88-0	Butyrolactone, beta-	
7440-43-9	Cadmium	
CADMIUM-COMPS	Cadmium Compounds	
13765-19-0	Calcium Chromate	
105-60-2	Caprolactum	
75-15-0	Carbon disulfide	
630-08-0	Carbon Monoxide	
56-23-5	Carbon tetrachloride	
463-58-1	Carbonyl sulfide	
111-15-9	Cellosolve Acetate (ethylene glycol monoet	

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name	
1306-38-3	Cerium Oxide and Cerium Compounds	
12789-03-6	Chlordane or (57-74-9)	
115-28-6	Chlorendic acid	
108171-26-2	Chlorinated Paraffins (C12, 60% Chlorine)	
7782-50-5	Chlorine	
10049-04-4	Chlorine Oxide (CLO2)	
75-68-3	Chloro-1,1-difluoroethane, 1- (HCFC-142b)	
563-47-3	Chloro-2-methylpropene, 3-	
95-83-0	Chloro-o-phenylenediamine, 4-	
95-69-2	Chloro-o-toluidine, p-	
532-27-4	Chloroacetophenone, 2-	
108-90-7	Chlorobenzene	
98-56-6	Chlorobenzotrifluoride, 4-	
75-45-6	Chlorodifluoromethane (HCFC-22)	
67-66-3	Chloroform	
107-30-2	Chloromethyl Methyl Ether	
88-73-3	Chloronitrobenzene, o-	
100-00-5	Chloronitrobenzene, p-	
76-06-2	Chloropicrin	
126-99-8	Chloroprene	
1333-82-0	Chromic acid mists and dissolved Cr(VI) ae	
7440-47-3	Chromium	
18540-29-9	Chromium (Hexavalent)	
18540-29-9-pm	Chromium (Hexavalent) - Particulate	
CHROM-COMPS	Chromium Compounds	
16065-83-1	Chromium(III) Compounds	
218-01-9	Chrysene (Benzo(a)phenanthrene)	
87-29-6	Cinnamyl anthranilate	
10061-01-5	cis-1,3-Dichloropropene	
8007-45-2	Coal Tar	
7440-48-4	Cobalt	
0-00-7	Coke Oven Emissions	
7440-50-8	Copper	
COPPER-COMPS	Copper Compounds	
120-71-8	Cresidine, p-	
108-39-4	Cresol, m-	
95-48-7	Cresol, o-	
106-44-5	Cresol, p-	
1319-77-3	Cresols/Cresylic acid (isomers and mixture)	
98-82-8	Cumene	

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name	
135-20-6	Cupferron	
57-12-5	Cyanide (Cyanide ion, Inorganic cyanides, I	
CYANIDE-COMPS	Cyanide Compounds	
110-82-7	Cyclohexane	
108-94-1	Cyclohexanone	
27208-37-3	Cyclopenta[c,d]pyrene	
50-29-3	DDT	
615-05-4	Diaminoanisole, 2,4-	
101-80-4	Diaminodiphenyl ether, 4,4-	
103-33-3	Diazene, Diphenyl	
226-36-8	Dibenz(a,h)acridine	
224-42-0	Dibenz(a,j)acridine	
53-70-3	Dibenz[a,h]anthracene	
192-65-4	Dibenzo(a,e)pyrene	
189-64-0	Dibenzo(a,h)pyrene	
191-30-0	Dibenzo(a,l)pyrene	
194-59-2	Dibenzo(c,g)carbazole, 7H-	
5385-75-1	Dibenzo[a,e]fluoranthene	
189-55-9	Dibenzo[a,i]pyrene	
96-12-8	Dibromo-3-chloropropane, 1,2-	
764-41-0	Dichloro-2-butene, 1,4-	
1476-11-5	Dichloro-2-butene, cis-1,4-	
106-46-7	Dichlorobenzene(p), 1,4-	
25321-22-6	Dichlorobenzenes	
91-94-1	Dichlorobenzidene, 3,3-	
75-71-8	Dichlorodifluoromethane (CFC-12)	
75-35-4	Dichloroethylene (1,1-) (Vinylidene chloride)	
156-60-5	Dichloroethylene, trans-1,2-	
542-75-6	Dichloropropene, 1,3-	
78-88-6	Dichloropropene, 2,3-	
62-73-7	Dichlorvos	
77-73-6	Dicyclopentadiene	
60-57-1	Dieldrin	
0-02-4	Diesel exhaust particulate	
111-42-2	Diethanolamine	
112-34-5	Diethylene Glycol Monobutyl Ether	
111-90-0	Diethylene Glycol Monoethyl Ether	
75-37-6	Difluoroethane, 1,1-	
108-20-3	Diisopropyl Ether	
60-11-7	Dimethyl aminoazobenzene	

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name	
68-12-2	Dimethyl formamide	
108-01-0	Dimethylamino ethanol, 2-	
57-97-6	Dimethylbenz[a]anthracene, 7,12-	
57-14-7	Dimethylhydrazine, 1,1-	
42397-64-8	Dinitropyrene, 1,6- (BaP)	
42397-65-9	Dinitropyrene, 1,8- (BaP)	
121-14-2	Dinitrotoluene, 2,4-	
123-91-1	Dioxane, 1,4- (1,4-Diethylene dioxide)	
122-66-7	Diphenylhydrazine, 1,2-	
106-89-8	Epichlorohydrin (l-Chloro-2,3-epoxypropane	
106-88-7	Epoxybutane, 1,2-	
110-80-5	Ethoxyethanol, 2- (ethylene glycol monoeth	
141-78-6	Ethyl acetate	
140-88-5	Ethyl Acrylate	
100-41-4	Ethyl benzene	
51-79-6	Ethyl carbamate (Urethane)	
75-00-3	Ethyl chloride (Chloroethane)	
97-63-2	Ethyl Methacrylate	
106-93-4	Ethylene dibromide (Dibromoethane)	
107-06-2	Ethylene dichloride (1,2-Dichloroethane)	
107-21-1	Ethylene glycol	
75-21-8	Ethylene oxide	
96-45-7	Ethylene thiourea	
75-34-3	Ethylidene dichloride (1,1-Dichloroethane)	
206-44-0	Fluoranthene	
FLUORIDES	Fluorides (except hydrogen fluoride)	
50-00-0	Formaldehyde	
64-18-6	Formic Acid	
111-30-8	Glutaraldehyde	
0-01-2	Glycol ethers	
76-44-8	Heptachlor	
1024-57-3	Heptachlor epoxide	
35822-46-9	Heptachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8-	
00-08-5	Heptachlorodibenzodioxin, All Isomers	
67562-39-4	Heptachlorodibenzofuran, 1,2,3,4,6,7,8-	
55673-89-7	Heptachlorodibenzofuran, 1,2,3,4,7,8,9-	
00-08-4	Heptachlorodibenzofuran, All Isomers	
142-82-5	Heptane, N	
118-74-1	Hexachlorobenzene	
87-68-3	Hexachlorobutadiene	

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name	
608-73-1	Hexachlorocyclohexane (technical grade)	
319-84-6	Hexachlorocyclohexane, alpha-	
319-85-7	Hexachlorocyclohexane, beta-1,2,3,4,5,6-	
77-47-4	Hexachlorocyclopentadiene	
39227-28-6	Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-	
57653-85-7	Hexachlorodibenzo-p-dioxin, 1,2,3,6,7,8-	
19408-74-3	Hexachlorodibenzo-p-dioxin, 1,2,3,7,8,9-	
00-08-3	Hexachlorodibenzodioxins, All Isomers	
70648-26-9	Hexachlorodibenzofuran, 1,2,3,4,7,8-	
57117-44-9	Hexachlorodibenzofuran, 1,2,3,6,7,8-	
72918-21-9	Hexachlorodibenzofuran, 1,2,3,7,8,9-	
60851-34-5	Hexachlorodibenzofuran, 2,3,4,6,7,8-	
00-08-2	Hexachlorodibenzofurans, All Isomers	
67-72-1	Hexachloroethane	
822-06-0	Hexamethylene-1,6-diisocyanate	
110-54-3	Hexane	
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl-1-hexanol)	
591-78-6	Hexanone-2	
302-01-2	Hydrazine	
10034-93-2	Hydrazine sulfate	
7647-01-0	Hydrochloric acid (hydrogen chloride)	
74-90-8	Hydrogen cyanide	
7664-39-3	Hydrogen fluoride (Hydrofluoric acid)	
7783-07-5	Hydrogen selenide	
7783-06-4	Hydrogen sulfide	
193-39-5	Indeno(1,2,3-cd)pyrene	
5888-33-5	Isobornyl acrylate	
78-59-1	Isophorone	
67-63-0	Isopropyl alcohol	
7439-92-1	Lead	
7758-97-6	Lead Chromate	
LEAD-COMPS	Lead Compounds	
58-89-9	Lindane (all isomers)	
108-31-6	Maleic anhydride	
7439-96-5	Manganese	
MANGANESE-COMP	Manganese Compounds	
7439-97-6	Mercury (elemental)	
MERCURY-COMPS	Mercury Compounds	
126-98-7	Methacrylonitrile	
67-56-1	Methanol	

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name	
109-86-4	Methoxyethanol, 2- (ethylene glycol monom	
96-33-3	Methyl acrylate	
110-49-6	Methyl Cellosolve Acetate	
74-87-3	Methyl chloride (Chloromethane)	
71-55-6	Methyl chloroform (1,1,1-Trichloroethane)	
78-93-3	Methyl ethyl ketone (2-Butanone)	
60-34-4	Methyl Hydrazine	
108-10-1	Methyl isobutyl ketone (Hexone)	
624-83-9	Methyl isocyanate	
80-62-6	Methyl methacrylate	
1634-04-4	Methyl tert butyl ether	
56-49-5	Methylcholanthrene, 3-	
3697-24-3	Methylchrysene, 5-	
101-14-4	Methylene bis(2-chloroaniline), 4,4-	
74-95-3	Methylene Bromide	
75-09-2	Methylene chloride (Dichloromethane)	
101-68-8	Methylene diphenyl diisocyanate (MDI)	
101-77-9	Methylenedianiline, 4,4-	
90-94-8	Michler's ketone	
10595-95-6	N- Nitrosomethylethylamine	
924-16-3	N-Nitrosodi-n-butylamine	
621-64-7	N-Nitrosodi-n-propylamine	
55-18-5	N-Nitrosodiethylamine	
62-75-9	N-Nitrosodimethylamine	
86-30-6	N-Nitrosodiphenylamine	
59-89-2	N-Nitrosomorpholine	
100-75-4	N-Nitrosopiperidine	
111-84-2	N-Nonane	
64724-95-6	Naphtha, High Flash Aromatic (HFAN)	
91-20-3	Naphthalene	
193-09-9	Naphtho[2,3-e]pyrene	
7440-02-0	Nickel	
NICKEL-COMPS	Nickel Compounds	
1313-99-1	Nickel oxide	
0-02-5	Nickel refinery dust from the pyrometallurgic	
12035-72-2	Nickel sulfide (NI3S2)	
7697-37-2	Nitric acid	
139-13-9	Nitrilotriacetic acid	
18662-53-8	Nitrilotriacetic acid, trisodium salt monohydr	
602-87-9	Nitroacenaphthene, 5-	

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name	
88-74-4	Nitroaniline, 2-	
100-01-6	Nitroaniline, 4-	
98-95-3	Nitrobenzene	
7496-02-8	Nitrochrysene, 6-	
607-57-8	Nitrofluorene, 2-	
10102-44-0	Nitrogen dioxide (NO2)	
75-52-5	Nitromethane	
79-46-9	Nitropropane, 2-	
5522-43-0	Nitropyrene, 1-	
57835-92-4	Nitropyrene, 4-	
156-10-5	Nitrosodiphenylamine, p-	
3268-87-9	Octachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8,9-	
39001-02-0	Octachlorodibenzofuran, 1,2,3,4,6,7,8,9-	
10028-15-6	Ozone	
74472-37-0	PCB 114 (2,3,4,4,5 Pentachlorobiphenyl)	
31508-00-6	PCB 118 (2,3,4,4,5 Pentachlorobiphenyl)	
65510-44-3	PCB 123 (2,3,4,4,5 Pentachlorobiphenyl)	
57465-28-8	PCB 126 (3,3,4,4,5 Pentachlorobiphenyl)	
38380-0804	PCB 156 (2,3,3,4,4,5 Hexachlorobiphenyl)	
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexachlorobiphenyl)	
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexachlorobiphenyl)	
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexachlorobiphenyl)	
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Heptachlorobipheny	
32598-13-3	PCB 77 (3,3,4,4-Tetrachlorobiphenyl)	
70362-50-4	PCB 81 (3,4,4,5 Tetrachlorobiphenyl)	
32598-14-4	PCB105 (2,3,3,4,4 Pentachlorobiphenyl)	
40321-76-4	Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-	
00-08-1	Pentachlorodibenzodioxins, All Isomers	
57117-41-6	Pentachlorodibenzofuran, 1,2,3,7,8-	
57117-31-4	Pentachlorodibenzofuran, 2,3,4,7,8-	
00-09-0	Pentachlorodibenzofurans, All Isomers	
87-86-5	Pentachlorophenol	
109-66-0	Pentane, n-	
ALIPHATIC-C5-C8	Petroleum Hydrocarbons, Aliphatic Low (C5	
ALIPHATIC-C9-C18	Petroleum Hydrocarbons, Aliphatic Medium	
AROMATIC-C6-C8	Petroleum Hydrocarbons, Aromatic Low (C6	
AROMATIC-C9-C16	Petroleum Hydrocarbons, Aromatic Medium	
85-01-8	Phenanthrene	
108-95-2	Phenol	
75-44-5	Phosgene	

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name	
7803-51-2	Phosphine	
7664-38-2	Phosphoric acid	
85-44-9	Phthalic anhydride	
59536-65-1	Polybrominated Biphenyls	
1336-36-3	Polychlorinated biphenyls (Aroclors unspeci	
00-08-0	Polychlorinated Dibenzo-P-Dioxins And Fur	
00-05-0	Polychlorinated Dibenzodioxins, Total	
00-05-1	Polychlorinated Dibenzofurans, Total	
130498-29-2	Polycyclic Aromatic Hydrocarbons (PAH)	
00-01-7	Polycyclic Organic Matter (POM)	
9016-87-9	Polymeric diphenylmethane diisocyanate	
7758-01-2	Potassium bromate	
1120-71-4	Propane sultone, 1,3-	
57-57-8	Propiolactone, beta-	
123-38-6	Propionaldehyde	
115-07-1	Propylene	
78-87-5	Propylene dichloride (1,2-Dichloropropane)	
107-98-2	Propylene Glycol Monomethyl Ether	
75-56-9	Propylene oxide	
930-55-2	Pyrrolidine, 1-Nitroso-	
7782-49-2	Selenium	
0-01-9	Selenium Compounds	
7631-86-9	Silica (crystalline, respirable, PM4)	
1310-73-2	Sodium hydroxide	
10588-01-9	Sodium Dichromate	
7789-06-2	Strontium chromate	
100-42-5	Styrene	
96-09-3	Styrene oxide	
14808-79-8	Sulfates	
126-33-0	Sulfolane	
7446-09-5	Sulfur dioxide	
7664-93-9	Sulfuric acid (aerosol forms only)	
8014-95-7	Sulfuric Acid mixture w. sulfur trioxide (oleu	
00-09-1	TCDD Eqivalents, 2,3,7,8-	
540-88-5	Tert-Butyl Acetate	
1746-01-6	Tetrachlorodibenzo-p-dioxin, 2,3,7,8-	
00-08-8	Tetrachlorodibenzodioxins, All Isomers	
51207-31-9	Tetrachlorodibenzofuran, 2,3,7,8-	
00-08-6	Tetrachlorodibenzofurans, All Isomers	
630-20-6	Tetrachloroethane, 1,1,1,2-	

RASS version: 2020-12 **Facility name:**

*Replace stack names with source IDs: 'SV01'

CAS # or MPCA #	Chemical Name	
79-34-5	Tetrachloroethane, 1,1,2,2-	
127-18-4	Tetrachloroethylene (Perchloroethylene)	
811-97-2	Tetrafluoroethane, 1,1,1,2-	
109-99-9	Tetrahydrofuran	
62-55-5	Thioacetamide	
62-56-6	Thiourea	
108-88-3	Toluene	
584-84-9	Toluene-2,4-diisocyanate	
91-08-7	Toluene-2,6-diisocyanate	
95-80-7	Toluene diamine, 2,4-	
26471-62-5	Toluenediisocyanate (mixed isomers)	
95-53-4	Toluidine, o- (Methylaniline, 2-)	
8001-35-2	Toxaphene (chlorinated camphene)	
10061-02-6	trans-1,3-Dichloropropene	
120-82-1	Trichlorobenzene, 1,2,4-	
79-00-5	Trichloroethane, 1,1,2-	
79-01-6	Trichloroethylene (TCE)	
75-69-4	Trichlorofluoromethane (CFC-11)	
88-06-2	Trichlorophenol, 2,4,6-	
96-18-4	Trichloropropane, 1,2,3-	
96-19-5	Trichloropropene, 1,2,3-	
76-13-1	Trichlorotrifluoroethane, 1,1,2- (CFC-13)	
121-44-8	Triethylamine	
420-46-2	Trifluoroethane, 1,1,1-	
526-73-8	Trimethylbenzene, 1,2,3-	
95-63-6	Trimethylbenzene, 1,2,4-	
108-67-8	Trimethylbenzene, 1,3,5-	
URANIUM-SOLUBLE	Uranium (Soluble Salts)	
7440-61-1	Uranium, Insoluble Compounds	
7440-62-2	Vanadium and Compounds	
1314-62-1	Vanadium Pentoxide, (V2O5)	
108-05-4	Vinyl acetate	
593-60-2	Vinyl bromide	
75-01-4	Vinyl chloride	
1330-20-7	Xylenes	
108-38-3	Xylenes, m-	
95-47-6	Xylenes, o-	
106-42-3	Xylenes, p-	
13530-65-9	Zinc chromate	

RASS version: 2020-12

*Inputs should be made in yellow cells

*You may run AERMOD or other refined dispersion modeling to replace the default screening values. Values are unit dispersion: 1 ug/m3 per 1 g/s emissions.

	Notes	STRU1	STRU73	0	0	0	0	0
Stack height (meters)	required for lookup (1-99 m)							
Distance to property line or receptor (meters)	required for lookup (10-10,000m)							
1-hr dispersion value	auto-lookup or manual entry	661.56314	244.8047					
24-hr dispersion value	auto-lookup or manual entry	220.60923	107.83344					
Monthly dispersion value	auto-lookup or manual entry	55.94586	31.51514					
Annual dispersion value	auto-lookup or manual entry	30.5576	17.10136					

0	0	STRU15	STRU16	STRU17	STRU74	STRU20	STRU75	0	STRU23	STRU24
		844.15637	942.23694	997.36156	916.79072	853.81235	834.24735		837.42076	723.25052
		249.65754	293.20436	307.95261	351.55772	357.39474	378.459		417.93985	284.53048
		60.5364	59.04696	72.41846	80.65847	81.18812	94.71425		95.1363	77.97765
		35.36292	33.99212	32.84186	33.54673	34.12756	36.37314		37.06747	35.43051

STRU25	STRU26	STRU30	STRU31	STRU32	STRU33	STRU34	STRU35	STRU41	STRU43	STRU44
690.23736	768.95167	842.81056	803.69513	826.34269	821.7015	796.71937	2446.58646	1270.07829	534.51189	631.1536
250.29696	270.68305	258.79284	271.48558	274.21519	271.77162	262.59257	745.1469	391.95471	174.13534	147.38582
66.14511	80.87883	65.80789	65.74982	66.17728	67.53049	68.37332	225.98933	116.21701	40.92095	36.41096
32.80956	44.83291	37.62176	37.52619	37.58984	38.19857	38.35918	151.56091	64.93369	25.0508	12.64698

STRU45	STRU46	STRU47	STRU48	STRU49	STRU50	STRU51	STRU52	STRU53	STRU59	STRU60	STRU56
625.54039	419.00888	559.6896	493.646	523.5748	523.67293	420.91225	431.63613	417.63	365.24949	412.17716	386.34186
118.47289	130.35973	196.13509	150.80248	165.57427	186.63441	164.66859	160.96061	155.15868	125.65258	140.19671	161.70665
25.95928	34.1538	39.2958	41.11613	41.32228	48.08442	42.85295	42.19598	42.50666	38.56136	36.50124	40.60507
13.81149	17.7954	23.26086	24.999	25.29585	24.45672	24.49931	24.0863	23.4681	19.49368	22.63007	22.01374

STRU57	SBLDGIA	NBLDGIA	STRU67	STRU68	STRU69	STRU70	STRU71	STRU72
2956.46157	2673.22733	591.95402	0	602.35781	659.05056	666.43062	2296.4915	2117.82087
483.94283	820.30548	236.5298	0	195.70945	252.73712	241.90103	805.2	713.94323
84.3683	315.1349	76.90159	0	52.27692	58.8874	59.68841	322.20217	245.4855
43.51098	233.91129	57.61048	0	29.10325	35.12321	35.18704	216.07356	155.24793

RASS version: 2020-12
No inputs on this page

Air Toxics Screening

Total Inhalation Risk				Total Indirect Pathway Risk						Total Multi-pathway Risk						
Acute	Subchronic Noncancer	Chronic Noncancer	Cancer Index (1 = 1E-05)	Farmer Noncancer	Farmer Cancer Index	Urban Gardener Noncancer	Urban Gardener Cancer Index	Resident Noncancer	Resident Cancer Index	Farmer Noncancer	Farmer Cancer Index	Urban Gardener Noncancer	Urban Gardener Cancer Index	Resident Noncancer	Resident Cancer Index	
1	0	1	0	0	0	0	0	0	0	1	0	1	0	1	0	<-- Rounded value for reportin
1	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**<-- Guidance leve**
OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	<-- OK or REFINE?
0.52	0.11	1.18	0.15	0.00	0.00	0.00	0.00	0.00	0.00	1.18	0.16	1.18	0.16	1.18	0.16	<-- Calculated value f or further calculation and transparen

Air Toxics Endpoint Refinement

Total Inhalation Hazard Indices

	1.0	**1.0**	**1.0**	**<-- Guidance leve**
	OK	OK	OK	<-- OK or REFINE?

Endpoint*	**Acute**	**Subchronic Noncancer**	**Chronic Noncancer**
Auditory	0.00	0.00	0.00
Blood / Hematological	0.00	0.09	1.00
Bone / Teeth	0.00	0.00	0.00
Cardiovascular	0.02	0.00	0.01
Digestive	0.00	0.00	0.00
Eyes	0.01	0.00	0.01
Kidney	0.00	0.02	0.03
Liver	0.00	0.00	0.00
Neurological	0.01	0.00	0.01
Reproductive / Developm	0.01	0.00	0.01
Respiratory	0.50	0.03	0.16
Skin	0.00	0.00	0.01

*Some pollutants have more than one endpoint and are included in multiple endpoint tota

Ceiling Value Exceeded?		
Arsenic	7440-38-2	NO
Benzene	71-43-2	NO
Bromopropane,	106-94-5	NO
Butadiene, 1,3-	106-99-0	NO
Carbon disulfid	75-15-0	NO
Carbon tetrachlo	56-23-5	NO
Cellosolve Aceta	111-15-9	NO
Chloroform	67-66-3	NO
Ethoxyethanol, 2	110-80-5	NO
Ethyl benzene	100-41-4	NO
Ethyl chloride (C	75-00-3	NO
Mercury	7439-97-6	NO
Methoxyethanol,	109-86-4	NO
Propylene oxid	75-56-9	NO

RASS version: 2020-12

No inputs on this page

		Inhalation Risks				Chronic Non-inhalation Pathway Risks						Chronic Total Risks (Inhalation + Non-inhalation)					
CAS# or MPCA#	Chemical Name	Acute	Subchronic Noncancer	Chronic Noncancer	Cancer Index	Farmer Noncancer	Farmer Cancer Index	Urban Gardener Noncancer	Urban Gardener Cancer Index	Resident Noncancer	Resident Cancer Index	Farmer Noncancer	Farmer Cancer Index	Urban Gardener Noncancer	Urban Gardener Cancer Index	Resident Noncancer	Resident Cancer Index
	All pollutant total	**0.52**	**0.11**	**1.18**	**0.15**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.18**	**0.16**	**1.18**	**0.16**	**1.18**	**0.16**
202-94-8	11H-Benz[b,c]aceanthrylene																
202-98-2	4H-Cyclopenta[d,e,f]chrysene																
75-07-0	Acetaldehyde																
60-35-5	Acetamide																
67-64-1	Acetone	0.00	0.00	0.00		-		-		-		0.00		0.00		0.00	
75-86-5	Acetone Cyanohydrin																
75-05-8	Acetonitrile																
53-96-3	Acetylaminofluorene, 2-																
107-02-8	Acrolein																
79-06-1	Acrylamide																
3688-53-7	Acrylamide,2-(2-furyl)-3-(5-nitro-2																
79-10-7	Acrylic acid																
107-13-1	Acrylonitrile																
111-69-3	Adiponitrile																
ALDEHYDES	Aldehydes																
309-00-2	Aldrin																
ALIPHATIC-MID	Aliphatic Hydrocarbon Streams (																
107-05-1	Allyl chloride																
7429-90-5	Aluminum																
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3,4-thia																
6109-97-3	Amino-9-ethylcarbazolehydrochlo																
117-79-3	Aminoanthraquinone, 2-																
7664-41-7	Ammonia																
62-53-3	Aniline																
191-26-4	Anthanthrene																
7440-36-0	Antimony																
ANTIMONY-COMPS	Antimony Compounds																
1309-64-4	Antimony trioxide																
140-57-8	Aramite																
7440-38-2	Arsenic	0.00		0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.00	0.02
ARSENIC-COMPS	Arsenic Compounds																
1327-53-3	Arsenic Trioxide																
7784-42-1	Arsine																
1332-21-4	Asbestos (units in fibers)																
1332-21-4-LAA	Asbestos, Libby Amphibole (units																
123-77-3	Azodicarbonamide																
10294-40-3	Barium Chromate																
199-54-2	Benz[e]aceanthrylene																
202-33-5	Benz[j]aceanthrylene																
211-91-6	Benz[l]aceanthrylene																
71-43-2	Benzene	0.00	0.00	0.00	0.00	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00
92-87-5	Benzidine																
205-82-3	Benzo(j)fluoranthene																
207-08-9	Benzo(k)fluoranthene																
56-55-3	Benzo[a]anthracene																
50-32-8	Benzo[a]pyrene																
205-99-2	Benzo[b]fluoranthene																
205-12-9	Benzo[c]fluorene																
191-24-2	Benzo[g,h,i]perylene																
65-85-0	Benzoic Acid																
100-44-7	Benzyl chloride	0.00	0.00	0.00	0.00	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00
7440-41-7	Beryllium			0.00	0.00	-	0.00	-	0.00	-	-	0.00	0.00	0.00	0.00	0.00	0.00
BERYLLIUM-COMPS	Beryllium Compounds																
13510-49-1	Beryllium sulfate																
111-44-4	Bis(2-chloroethyl)ether																
117-81-7	Bis(2-ethylhexyl)phthalate (DEHP																
542-88-1	Bis(chloromethyl)ether																
7440-42-8	Boron And Borates Only																
10294-34-5	Boron Trichloride																
7637-07-2	Boron Trifluoride																
108-86-1	Bromobenzene																
74-97-5	Bromochloromethane																
75-27-4	Bromodichloromethane		0.00		0.00		-		-		-		0.00		0.00		0.00
75-25-2	Bromoform				0.00		-		-		-		0.00		0.00		0.00
74-83-9	Bromomethane	0.00	0.00	0.00		-		-		-		0.00		0.00		0.00	
106-94-5	Bromopropane, 1-																
106-99-0	Butadiene, 1,3-	0.00		0.00	0.00	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00
78-92-2	Butyl alcohol, sec-																
111-76-2	Butyl Cellosolve (ethylene glycol																
25013-16-5	Butylated hydroxyanisole																
3068-88-0	Butyrolactone, beta-																
7440-43-9	Cadmium			0.01	0.04	-	-	-	-	-	-	0.01	0.04	0.01	0.04	0.01	0.04
CADMIUM-COMPS	Cadmium Compounds																
13765-19-0	Calcium Chromate																
105-60-2	Caprolactum																
75-15-0	Carbon disulfide	0.00		0.00		-		-		-		0.00		0.00		0.00	
630-08-0	Carbon Monoxide	0.01															
56-23-5	Carbon tetrachloride	0.00		0.00	0.00	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00
463-58-1	Carbonyl sulfide																
111-15-9	Cellosolve Acetate (ethylene glyc																
1306-38-3	Cerium Oxide and Cerium Compo																
12789-03-6	Chlordane or (57-74-9)																
115-28-6	Chlorendic acid																
10361-26-2	Chlorinated Paraffins (C12, 60%																
7782-50-5	Chlorine																
10049-04-4	Chlorine Oxide (CLO2)																
75-68-3	Chloro-1,1-difluoroethane, 1- (HC																
563-47-3	Chloro-2-methylpropene, 3-																
95-83-0	Chloro-o-phenylenediamine, 4-																
95-69-2	Chloro-o-toluidine, p-																
532-27-4	Chloroacetophenone, 2-																
108-90-7	Chlorobenzene		0.00	0.00		-		-		-		0.00		0.00		0.00	
98-56-6	Chlorobenzotrifluoride, 4-																
75-45-6	Chlorodifluoromethane(HCFC-22																
67-66-3	Chloroform	0.00		0.00	0.00	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00
107-30-2	Chloromethyl Methyl Ether																
88-73-3	Chloronitrobenzene, o-																
100-00-5	Chloronitrobenzene, p-																
76-06-2	Chloropicrin																
126-99-8	Chloroprene																
1333-82-0	Chromic acid mists and dissolved																
7440-47-3	Chromium																
18540-29-9	Chromium (Hexavalent		0.00	0.00	0.04	-	0.00	-	-	-	-	0.00	0.04	0.00	0.04	0.00	0.04
18540-29-9-pm	Chromium (Hexavalent) - Particul																
CHROM-COMPS	Chromium Compounds																
16065-83-1	Chromium(III) Compound		0.00														
218-01-9	Chrysene (Benzo(a)phenanthrene																
87-29-6	Cinnamyl anthranilate																
10061-01-5	cis-1,3-Dichloropropene		0.00	0.00	0.00	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00
8007-45-2	Coal Tar																
7440-48-4	Cobalt		0.00	0.00	0.02	-	-	-	-	-	-	0.00	0.02	0.00	0.02	0.00	0.02
8007-45-2	Coke Oven Emissions																
7440-50-8	Copper																
COPPER-COMPS	Copper Compounds																
120-71-8	Cresidine, p-																
108-39-4	Cresol, m-																
95-48-7	Cresol, o-																
106-44-5	Cresol, p-																
1319-77-3	Cresols/Cresylic acid (isomers an																
98-82-8	Cumene																
135-20-6	Cupferron																
57-12-5	Cyanide (Cyanide ion, Inorganic c																
CYANIDE-COMPS	Cyanide Compounds																
110-82-7	Cyclohexane		0.00	0.00		-		-		-		0.00		0.00		0.00	
108-94-1	Cyclohexanone																
27208-37-3	Cyclopenta[c,d]pyrene																
50-29-3	DDT																
615-05-4	Diaminoanisole, 2,4-																
101-80-4	Diaminodiphenyl ether, 4,4-																
103-33-3	Diazene, Diphenyl																
226-36-8	Dibenz(a,h)acridine																
224-42-0	Dibenz(a,j)acridine																
53-70-3	Dibenz[a,h]anthracene																
192-65-4	Dibenzo(a,e)pyrene																
189-64-0	Dibenzo(a,h)pyrene																
191-30-0	Dibenzo(a,l)pyrene																
194-59-2	Dibenzo(c,g)carbazole, 7H-																
5385-75-1	Dibenzo[a,e]fluoranthene																
189-55-9	Dibenzo[a,l]pyrene																
96-12-8	Dibromo-3-chloropropane, 1,2-																
764-41-0	Dichloro-2-butene, 1,4-																
1476-11-5	Dichloro-2-butene, cis-1,4-																
106-46-7	Dichlorobenzene(p), 1,4-		0.00	0.00	0.00	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00
25321-22-6	Dichlorobenzenes		0.00	0.00	0.00	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00
91-94-1	Dichlorobenzidene, 3,3-																
75-71-8	Dichlorodifluoromethane(CFC-12		0.00														
75-35-4	Dichloroethylene(1,1-)(Vinylidien			0.00		-		-		-		0.00		0.00		0.00	
156-60-5	Dichloroethylene, trans-1,2-		0.09	0.96		-		-		-		0.96		0.96		0.96	
542-75-6	Dichloropropene, 1,3-																
78-88-6	Dichloropropene, 2,3-																
62-73-7	Dichlorvos																
77-73-6	Dicyclopentadiene																
60-57-1	Dieldrin																
0-02-4	Diesel exhaust particulate																
111-42-2	Diethanolamine																
112-34-5	Diethylene Glycol Monobutyl Ethe																
111-90-0	Diethylene Glycol Monoethyl Ethe																
75-37-6	Difluoroethane, 1,1-																
108-20-3	Diisopropyl Ether																
60-11-7	Dimethyl aminoazobenzene																
68-12-2	Dimethyl formamide																
108-01-0	Dimethylamino ethanol, 2-																
57-97-6	Dimethylbenz[a]anthracene, 7,12-																
57-14-7	Dimethylhydrazine, 1,1-																
42397-64-8	Dinitropyrene, 1,6- (BaP)																
42397-65-9	Dinitropyrene, 1,8- (BaP)																
121-14-2	Dinitrotoluene, 2,4-																
123-91-1	Dioxane, 1,4- (1,4-Diethylene dio																
122-66-7	Diphenylhydrazine, 1,2-																
106-89-8	Epichlorohydrin (l-Chloro-2,3-epo																
106-88-7	Epoxybutane, 1,2-																
110-80-5	Ethoxyethanol, 2- (ethylene glycol																
141-78-6	Ethyl acetate		0.00	0.00		-		-		-		0.00		0.00		0.00	
140-88-5	Ethyl Acrylate																
100-41-4	Ethyl benzene	0.00	0.00	0.00	0.00	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00
51-79-6	Ethyl carbamate (Urethane)																
75-00-3	Ethyl chloride (Chloroethane)	0.00	0.00	0.00		-		-		-		0.00		0.00		0.00	
97-63-2	Ethyl Methacrylate																
106-93-4	Ethylene dibromide (Dibromoetha			0.00	0.00	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00
107-06-2	Ethylene dichloride (1,2-Dichloroe		0.00	0.00	0.00	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00
107-21-1	Ethylene glycol																
75-21-8	Ethylene oxide																
96-45-7	Ethylene thiourea																
75-34-3	Ethylidene dichloride(1,1-Dichlor				0.00		-		-		-		0.00		0.00		0.00
206-44-0	Fluoranthene																
FLUORIDES	Fluorides (except hydrogen fluorid																
50-00-0	Formaldehyde	0.01	0.00	0.00		-		-		-		0.00		0.00		0.00	
64-18-6	Formic Acid																
111-30-8	Glutaraldehyde																
0-01-2	Glycol ethers																
76-44-8	Heptachlor																
1024-57-3	Heptachlor epoxide																
35822-46-9	Heptachlorodibenzo-p-dioxin, 1,2,																
00-08-5	Heptachlorodibenzodioxin, All Iso																
67562-39-4	Heptachlorodibenzofuran, 1,2,3,4,																
55673-89-7	Heptachlorodibenzofuran, 1,2,3,4,																
00-08-4	Heptachlorodibenzofuran, All Iso																
142-82-5	Heptane, N		0.00	0.00		0.00		0.00		0.00		0.00		0.00		0.00	
118-74-1	Hexachlorobenzene																
87-68-3	Hexachlorobutadiene				0.00		-		-		-		0.00		0.00		0.00
608-73-1	Hexachlorocyclohexane(technica																
319-84-6	Hexachlorocyclohexane, alpha-																
319-85-7	Hexachlorocyclohexane, beta-1,2																
77-47-4	Hexachlorocyclopentadiene																
39227-28-6	Hexachlorodibenzo-p-dioxin, 1,2,3																
57653-85-7	Hexachlorodibenzo-p-dioxin, 1,2,3																
19408-74-3	Hexachlorodibenzo-p-dioxin, 1,2,3																
00-08-3	Hexachlorodibenzodioxins, All Iso																
70648-26-9	Hexachlorodibenzofuran, 1,2,3,4,																
57117-44-9	Hexachlorodibenzofuran, 1,2,3,6,																
72918-21-9	Hexachlorodibenzofuran, 1,2,3,7,																
60851-34-5	Hexachlorodibenzofuran, 2,3,4,6,																
00-08-2	Hexachlorodibenzofurans, All Iso																
67-72-1	Hexachloroethane																
822-06-0	Hexamethylene-1,6-diisocyanate																
110-54-3	Hexane		0.00	0.00		-		-		-		0.00		0.00		0.00	
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl-1-he																
591-78-6	Hexanone-2			0.00		-		-		-		0.00		0.00		0.00	
302-01-2	Hydrazine																
10034-93-2	Hydrazine sulfate																
7647-01-0	Hydrochloric acid (hydrogen chlor																
74-90-8	Hydrogen cyanide																
7664-39-3	Hydrogen fluoride (Hydrofluoric ac																

RASS version: 2020-12

No inputs on this page

		Inhalation Risks				Chronic Non-inhalation Pathway Risks						Chronic Total Risks (Inhalation + Non-inhalation)					
CAS# or MPCA#	Chemical Name	Acute	Subchronic Noncancer	Chronic Noncancer	Cancer Index	Farmer Noncancer	Farmer Cancer Index	Urban Gardener Noncancer	Urban Gardener Cancer Index	Resident Noncancer	Resident Cancer Index	Farmer Noncancer	Farmer Cancer Index	Urban Gardener Noncancer	Urban Gardener Cancer Index	Resident Noncancer	Resident Cancer Index
	All pollutant total	**0.52**	**0.11**	**1.18**	**0.15**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.18**	**0.16**	**1.18**	**0.16**	**1.18**	**0.16**
7783-07-5	Hydrogen selenide																
7783-06-4	Hydrogen sulfide																
193-39-5	Indeno(1,2,3-cd)pyrene																
5888-33-5	Isobornyl acrylate			0.06		-		-		-		0.06		0.06		0.06	
78-59-1	Isophorone																
67-63-0	Isopropyl alcohol	0.00	0.00	0.00		0.00		0.00		0.00		0.00		0.00		0.00	
7439-92-1	Lead																
7758-97-6	Lead Chromate																
LEAD-COMPS	Lead Compounds																
58-89-9	Lindane (all isomers)																
108-31-6	Maleic anhydride																
7439-96-5	Manganese			0.00		-		-		-		0.00		0.00		0.00	
MANGANESE-COMPS	Manganese Compounds																
7439-97-6	Mercury (elemental)	0.00		0.00		-		-		-		0.00		0.00		0.00	
MERCURY-COMPS	Mercury Compounds																
126-98-7	Methacrylonitrile																
67-56-1	Methanol																
109-86-4	Methoxyethanol, 2- (ethylene glyc																
96-33-3	Methyl acrylate																
110-49-6	Methyl Cellosolve Acetate																
74-87-3	Methyl chloride (Chloromethane)	0.00	0.00	0.00		-		-		-		0.00		0.00		0.00	
71-55-6	Methyl chloroform (1,1,1-trichloro	0.00	0.00	0.00		-		-		-		0.00		0.00		0.00	
78-93-3	Methyl ethyl ketone (2-butanone)	0.00		0.00		-		-		-		0.00		0.00		0.00	
60-34-4	Methyl Hydrazine																
108-10-1	Methyl isobutyl ketone (Hexone)			0.00		-		-		-		0.00		0.00		0.00	
624-83-9	Methyl isocyanate																
80-62-6	Methyl methacrylate																
1634-04-4	Methyl tert butyl ether	0.00	0.00	0.00	0.00	-	0.00	-	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00
56-49-5	Methylcholanthrene, 3-																
3697-24-3	Methylchrysene, 5-																
101-14-4	Methylene bis(2-chloroaniline), 4,																
74-95-3	Methylene Bromide																
75-09-2	Methylene chloride (Dichlorometh	0.00		0.00	0.00	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00
101-68-8	Methylene diphenyl diisocyanate (																
101-77-9	Methylenedianiline, 4,4-																
90-94-8	Michler's ketone																
10595-95-6	N- Nitrosomethylethylamine																
924-16-3	N-Nitrosodi-n-butylamine																
621-64-7	N-Nitrosodi-n-propylamine																
55-18-5	N-Nitrosodiethylamine																
62-75-9	N-Nitrosodimethylamine																
86-30-6	N-Nitrosodiphenylamine																
59-89-2	N-Nitrosomorpholine																
100-75-4	N-Nitrosopiperidine																
111-84-2	N-Nonane																
64724-95-6	Naphtha, High Flash Aromatic (H																
91-20-3	Naphthalene	0.00		0.00		-		-		-		0.00		0.00		0.00	
193-09-9	Naphtho[2,3-e]pyrene																
7440-02-0	Nickel	0.04		0.03	0.02	-	-	-	-	-	-	0.03	0.02	0.03	0.02	0.03	0.02
NICKEL-COMPS	Nickel Compounds																
1313-99-1	Nickel oxide																
0-02-5	Nickel refinery dust from the pyro																
12035-72-2	Nickel sulfide (NiS2)																
7697-37-2	Nitric acid																
139-13-9	Nitrilotriacetic acid																
18662-53-8	Nitrilotriacetic acid, trisodium salt																
602-87-9	Nitroacenaphthene, 5-																
88-74-4	Nitroaniline, 2-																
100-01-6	Nitroaniline, 4-																
98-95-3	Nitrobenzene																
7496-02-8	Nitrochrysene, 6-																
607-57-8	Nitrofluorene, 2-																
10102-44-0	Nitrogen dioxide (NO2)	0.32		0.10		-		-		-		0.10		0.10		0.10	
75-52-5	Nitromethane																
79-46-9	Nitropropane, 2-																
5522-43-0	Nitropyrene, 1-																
57835-92-4	Nitropyrene, 4-																
156-10-5	Nitrosodiphenylamine, p-																
3268-87-9	Octachlorodibenzo-p-dioxin, 1,2,3																
39001-02-0	Octachlorodibenzofuran, 1,2,3,4,6																
10028-15-6	Ozone																
74472-37-0	PCB 114 (2,3,4,4,5 Pentachlorobi																
31508-00-6	PCB 118 (2,3,4,4,5 Pentachlorobi																
65510-44-3	PCB 123 (2,3,4,4,5 Pentachlorobi																
57465-28-8	PCB 126 (3,3,4,4,5 Pentachlorobi																
38380-08-4	PCB 156 (2,3,3,4,4,5 Hexachloro																
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexachloro																
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexachloro																
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexachloro																
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Heptachlo																
32598-13-3	PCB 77 (3,3,4,4-Tetrachlorobiphe																
70362-50-4	PCB 81 (3,4,4,5 Tetrachlorobiphe																
32598-14-4	PCB105 (2,3,3,4,4 Pentachlorobip																
40321-76-4	Pentachlorodibenzo-p-dioxin, 1,2,																
00-08-1	Pentachlorodibenzodioxins, All Is																
57117-41-6	Pentachlorodibenzofuran, 1,2,3,7,																
57117-31-4	Pentachlorodibenzofuran, 2,3,4,7,																
00-09-0	Pentachlorodibenzofurans, All Iso																
87-86-5	Pentachlorophenol																
109-66-0	Pentane, n-																
ALIPHATIC-C5-C8	Petroleum Hydrocarbons, Aliphati																
ALIPHATIC-C9-C18	Petroleum Hydrocarbons, Aliphati		0.01	0.01		-		-		-		0.01		0.01		0.01	
AROMATIC-C6-C8	Petroleum Hydrocarbons, Aromat																
AROMATIC-C9-C16	Petroleum Hydrocarbons, Aromat																
85-01-8	Phenanthrene																
108-95-2	Phenol																
75-44-5	Phosgene																
7803-51-2	Phosphine																
7664-38-2	Phosphoric acid																
85-44-9	Phthalic anhydride																
59536-65-1	Polybrominated Biphenyls																
1336-36-3	Polychlorinated biphenyls (Aroclo																
00-08-0	Polychlorinated Dibenzo-P-Dioxin																
00-05-0	Polychlorinated Dibenzodioxins, T																
00-05-1	Polychlorinated Dibenzofurans, T																
130498-29-2	Polycyclic Aromatic Hydrocarbons																
00-01-7	Polycyclic Organic Matter (POM)				0.00		-		-		-	0.00		0.00		0.00	
9016-87-9	Polymeric diphenylmethane diisoc																
7758-01-2	Potassium bromate																
1120-71-4	Propane sultone, 1,3-																
57-57-8	Propiolactone, beta-																
123-38-6	Propionaldehyde																
115-07-1	Propylene			0.00		-		-		-		0.00		0.00		0.00	
78-87-5	Propylene dichloride (1,2-Dichlorc	0.00	0.00	0.00	0.00	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00
107-98-2	Propylene Glycol Monomethyl Eth																
75-56-9	Propylene oxide																
930-55-2	Pyrrolidine, 1-Nitroso-																
7782-49-2	Selenium			0.00		-		-		-		0.00		0.00		0.00	
0-01-9	Selenium Compounds																
7631-86-9	Silica (crystaline, respirable, PM4																
1310-73-2	Sodium hydroxide																
10588-01-9	Sodium Dichromate																
7789-06-2	Strontium chromate																
100-42-5	Styrene	0.00		0.00		-		-		-		0.00		0.00		0.00	
96-09-3	Styrene oxide																
14808-79-8	Sulfates																
126-33-0	Sulfolane																
7446-09-5	Sulfur dioxide	0.13															
7664-93-9	Sulfuric acid (aerosol forms only)																
8014-95-7	Sulfuric Acid mixture w. sulfur trio																
00-09-1	TCDD Equivalents, 2,3,7,8-																
540-88-5	Tert-Butyl Acetate																
1746-01-6	Tetrachlorodibenzo-p-dioxin, 2,3,7																
00-08-8	Tetrachlorodibenzodioxins, All Iso																
51207-31-9	Tetrachlorodibenzofuran, 2,3,7,8-																
00-08-6	Tetrachlorodibenzofurans, All Iso																
630-20-6	Tetrachloroethane, 1,1,1,2-																
79-34-5	Tetrachloroethane, 1,1,2,2-				0.00		-		-		-		0.00		0.00		0.00
127-18-4	Tetrachloroethylene (Perchloroeth	0.00	0.00	0.00	0.00	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00
811-97-2	Tetrafluoroethane, 1,1,1,2-																
109-99-9	Tetrahydrofuran			0.00		-		-		-		0.00		0.00		0.00	
62-55-5	Thioacetamide																
62-56-6	Thiourea																
108-88-3	Toluene	0.00	0.00	0.00		-		-		-		0.00		0.00		0.00	
584-84-9	Toluene-2,4-diisocyanate																
91-08-7	Toluene-2,6-diisocyanate																
95-80-7	Toluene diamine, 2,4-																
26471-62-5	Toluenediisocyanate (mixed isom																
95-53-4	Toluidine, o- (Methylaniline, 2-)																
8001-35-2	Toxaphene (chlorinated camphen																
10061-02-6	trans-1,3-Dichloropropene		0.00	0.00	0.00	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00
120-82-1	Trichlorobenzene, 1,2,4-		0.00	0.00		-		-		-		0.00		0.00		0.00	
79-00-5	Trichloroethane, 1,1,2-		0.00	0.00	0.00	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00
79-01-6	Trichloroethylene (TCE)	0.00	0.00	0.00	0.00	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00
75-69-4	Trichlorofluoromethane (CFC-11)		0.00	0.00		-		-		-		0.00		0.00		0.00	
88-06-2	Trichlorophenol, 2,4,6-																
96-18-4	Trichloropropane, 1,2,3-																
96-19-5	Trichloropropene, 1,2,3-																
76-13-1	Trichlorotrifluoroethane, 1,1,2-(C		0.00	0.00		-		-		-		0.00		0.00		0.00	
121-44-8	Triethylamine																
420-46-2	Trifluoroethane, 1,1,1-																
526-73-8	Trimethylbenzene, 1,2,3-																
95-63-6	Trimethylbenzene, 1,2,4-		0.00	0.00		-		-		-		0.00		0.00		0.00	
108-67-8	Trimethylbenzene, 1,3,5-		0.00	0.00		-		-		-		0.00		0.00		0.00	
URANIUM-SOLUBLE	Uranium (Soluble Salts)																
7440-61-1	Uranium, Insoluble Compounds																
7440-62-2	Vanadium and Compounds																
1314-62-1	Vanadium Pentoxide, (V2O5																
108-05-4	Vinyl acetate		0.00	0.00		-		-		-		0.00		0.00		0.00	
593-60-2	Vinyl bromide																
75-01-4	Vinyl chloride	0.00	0.00	0.00	0.00	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00
1330-20-7	Xylenes	0.00	0.00	0.00		-		-		-		0.00		0.00		0.00	
108-38-3	Xylenes, m-																
95-47-6	Xylenes, o-																
106-42-3	Xylenes, p-																
13530-65-9	Zinc chromate																

RASS version: 2020-12

No inputs needed on this page

Air Concentrations in ug/m3

		Total - All stacks				Stack #1			
CAS# or MPCA#	Chemical Name	C(1-hr)	C(24-hr)	C(monthly)	C(annual)	C(1-hr)	C(24-hr)	C(monthly)	C(annual)
202-94-8	11H-Benz[b,c]aceanthrylen	-	-	-	-	-	-	-	-
202-98-2	4H-Cyclopenta[d,e,f]chryse	-	-	-	-	-	-	-	-
75-07-0	Acetaldehyde	-	-	-	-	-	-	-	-
60-35-5	Acetamide	-	-	-	-	-	-	-	-
67-64-1	Acetone	0.01	0.00	0.00	0.00	-	-	-	-
75-86-5	Acetone Cyanohydrin	-	-	-	-	-	-	-	-
75-05-8	Acetonitrile	-	-	-	-	-	-	-	-
53-96-3	Acetylaminofluorene, 2-	-	-	-	-	-	-	-	-
107-02-8	Acrolein	-	-	-	-	-	-	-	-
79-06-1	Acrylamide	-	-	-	-	-	-	-	-
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-	-	-	-	-	-	-	-	-
79-10-7	Acrylic acid	-	-	-	-	-	-	-	-
107-13-1	Acrylonitrile	-	-	-	-	-	-	-	-
111-69-3	Adiponitrile	-	-	-	-	-	-	-	-
ALDEHYDES	Aldehydes	-	-	-	-	-	-	-	-
309-00-2	Aldrin	-	-	-	-	-	-	-	-
ALIPHATIC-M	Aliphatic Hydrocarbon Strea	-	-	-	-	-	-	-	-
107-05-1	Allyl chloride	-	-	-	-	-	-	-	-
7429-90-5	Aluminum	-	-	-	-	-	-	-	-
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3	-	-	-	-	-	-	-	-
6109-97-3	Amino-9-ethylcarbazolehydr	-	-	-	-	-	-	-	-
117-79-3	Aminoanthraquinone, 2-	-	-	-	-	-	-	-	-
7664-41-7	Ammonia	-	-	-	-	-	-	-	-
62-53-3	Aniline	-	-	-	-	-	-	-	-
191-26-4	Anthanthrene	-	-	-	-	-	-	-	-
7440-36-0	Antimony	-	-	-	-	-	-	-	-
ANTIMONY-C	Antimony Compounds	-	-	-	-	-	-	-	-
1309-64-4	Antimony trioxide	-	-	-	-	-	-	-	-
140-57-8	Aramite	-	-	-	-	-	-	-	-
7440-38-2	Arsenic	0.00	0.00	0.00	0.00	-	-	-	-
ARSENIC-CO	Arsenic Compounds	-	-	-	-	-	-	-	-
1327-53-3	Arsenic Trioxide	-	-	-	-	-	-	-	-
7784-42-1	Arsine	-	-	-	-	-	-	-	-
1332-21-4	Asbestos (units in fibers)	-	-	-	-	-	-	-	-
1332-21-4-LA	Asbestos, Libby Amphibole	-	-	-	-	-	-	-	-
123-77-3	Azodicarbonamide	-	-	-	-	-	-	-	-
10294-40-3	Barium Chromate	-	-	-	-	-	-	-	-
199-54-2	Benz[e]aceanthrylene	-	-	-	-	-	-	-	-
202-33-5	Benz[j]aceanthrylene	-	-	-	-	-	-	-	-
211-91-6	Benz[l]aceanthrylene	-	-	-	-	-	-	-	-
71-43-2	Benzene	0.01	0.00	0.00	0.00	-	-	-	-
92-87-5	Benzidine	-	-	-	-	-	-	-	-
205-82-3	Benzo(j)fluoranthene	-	-	-	-	-	-	-	-
207-08-9	Benzo(k)fluoranthene	-	-	-	-	-	-	-	-
56-55-3	Benzo[a]anthracene	-	-	-	-	-	-	-	-
50-32-8	Benzo[a]pyrene	-	-	-	-	-	-	-	-
205-99-2	Benzo[b]fluoranthene	-	-	-	-	-	-	-	-
205-12-9	Benzo[c]fluorene	-	-	-	-	-	-	-	-
191-24-2	Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-
65-85-0	Benzoic Acid	-	-	-	-	-	-	-	-
100-44-7	Benzyl chloride	0.00	0.00	0.00	0.00	-	-	-	-
7440-41-7	Beryllium	0.00	0.00	0.00	0.00	-	-	-	-
BERYLLIUM-	Beryllium Compounds	-	-	-	-	-	-	-	-
13510-49-1	Beryllium sulfate	-	-	-	-	-	-	-	-
111-44-4	Bis(2-chloroethyl)ether	-	-	-	-	-	-	-	-
117-81-7	Bis(2-ethylhexyl)phthalate (	-	-	-	-	-	-	-	-
542-88-1	Bis(chloromethyl)ether	-	-	-	-	-	-	-	-
7440-42-8	Boron And Borates Only	-	-	-	-	-	-	-	-
10294-34-5	Boron Trichloride	-	-	-	-	-	-	-	-
7637-07-2	Boron Trifluoride	-	-	-	-	-	-	-	-
108-86-1	Bromobenzene	-	-	-	-	-	-	-	-
74-97-5	Bromochloromethane	-	-	-	-	-	-	-	-
75-27-4	Bromodichloromethane	0.00	0.00	0.00	0.00	-	-	-	-
75-25-2	Bromoform	0.00	0.00	0.00	0.00	-	-	-	-
74-83-9	Bromomethane	0.00	0.00	0.00	0.00	-	-	-	-
106-94-5	Bromopropane, 1-	-	-	-	-	-	-	-	-
106-99-0	Butadiene, 1,3-	0.00	0.00	0.00	0.00	-	-	-	-
78-92-2	Butyl alcohol, sec-	-	-	-	-	-	-	-	-
111-76-2	Butyl Cellosolve (ethylene g	-	-	-	-	-	-	-	-
25013-16-5	Butylated hydroxyanisole	-	-	-	-	-	-	-	-
3068-88-0	Butyrolactone, beta-	-	-	-	-	-	-	-	-
7440-43-9	Cadmium	0.00	0.00	0.00	0.00	-	-	-	-
CADMIUM-C	Cadmium Compounds	-	-	-	-	-	-	-	-
13765-19-0	Calcium Chromate	-	-	-	-	-	-	-	-
105-60-2	Caprolactum	-	-	-	-	-	-	-	-
75-15-0	Carbon disulfide	0.00	0.00	0.00	0.00	-	-	-	-
630-08-0	Carbon Monoxide	333.22	109.51	31.99	20.50	-	-	-	-
56-23-5	Carbon tetrachloride	0.00	0.00	0.00	0.00	-	-	-	-
463-58-1	Carbonyl sulfide	-	-	-	-	-	-	-	-
111-15-9	Cellosolve Acetate (ethylen	-	-	-	-	-	-	-	-
1306-38-3	Cerium Oxide and Cerium	-	-	-	-	-	-	-	-
12789-03-6	Chlordane or (57-74-9)	-	-	-	-	-	-	-	-
115-28-6	Chlorendic acid	-	-	-	-	-	-	-	-
108171-26-2	Chlorinated Paraffins (C12,	-	-	-	-	-	-	-	-
7782-50-5	Chlorine	-	-	-	-	-	-	-	-

10049-04-4	Chlorine Oxide (CLO2)	-	-	-	-	-	-	-	-
75-68-3	Chloro-1,1-difluoroethane, 1	-	-	-	-	-	-	-	-
563-47-3	Chloro-2-methylpropene, 3-	-	-	-	-	-	-	-	-
95-83-0	Chloro-o-phenylenediamine	-	-	-	-	-	-	-	-
95-69-2	Chloro-o-toluidine, p-	-	-	-	-	-	-	-	-
532-27-4	Chloroacetophenone, 2-	-	-	-	-	-	-	-	-
108-90-7	Chlorobenzene	0.00	0.00	0.00	0.00	-	-	-	-
98-56-6	Chlorobenzotrifluoride, 4-	-	-	-	-	-	-	-	-
75-45-6	Chlorodifluoromethane (HC	-	-	-	-	-	-	-	-
67-66-3	Chloroform	0.00	0.00	0.00	0.00	-	-	-	-
107-30-2	Chloromethyl Methyl Ether	-	-	-	-	-	-	-	-
88-73-3	Chloronitrobenzene, o-	-	-	-	-	-	-	-	-
100-00-5	Chloronitrobenzene, p-	-	-	-	-	-	-	-	-
76-06-2	Chloropicrin	-	-	-	-	-	-	-	-
126-99-8	Chloroprene	-	-	-	-	-	-	-	-
1333-82-0	Chromic acid mists and diss	-	-	-	-	-	-	-	-
7440-47-3	Chromium	-	-	-	-	-	-	-	-
18540-29-9	Chromium (Hexavalent)	0.00	0.00	0.00	0.00	-	-	-	-
18540-29-9-p	Chromium (Hexavalent) - P	-	-	-	-	-	-	-	-
CHROM-COM	Chromium Compounds	-	-	-	-	-	-	-	-
16065-83-1	Chromium(III) Compounds	0.00	0.00	0.00	0.00	-	-	-	-
218-01-9	Chrysene (Benzo(a)phenan	-	-	-	-	-	-	-	-
87-29-6	Cinnamyl anthranilate	-	-	-	-	-	-	-	-
10061-01-5	cis-1,3-Dichloropropene	0.00	0.00	0.00	0.00	-	-	-	-
8007-45-2	Coal Tar	-	-	-	-	-	-	-	-
7440-48-4	Cobalt	0.00	0.00	0.00	0.00	-	-	-	-
0-00-7	Coke Oven Emissions	-	-	-	-	-	-	-	-
7440-50-8	Copper	-	-	-	-	-	-	-	-
COPPER-CO	Copper Compounds	-	-	-	-	-	-	-	-
120-71-8	Cresidine, p-	-	-	-	-	-	-	-	-
108-39-4	Cresol, m-	-	-	-	-	-	-	-	-
95-48-7	Cresol, o-	-	-	-	-	-	-	-	-
106-44-5	Cresol, p-	-	-	-	-	-	-	-	-
1319-77-3	Cresols/Cresylic acid (isome	-	-	-	-	-	-	-	-
98-82-8	Cumene	-	-	-	-	-	-	-	-
135-20-6	Cupferron	-	-	-	-	-	-	-	-
57-12-5	Cyanide (Cyanide ion, Inorg	-	-	-	-	-	-	-	-
CYANIDE-CO	Cyanide Compounds	-	-	-	-	-	-	-	-
110-82-7	Cyclohexane	0.00	0.00	0.00	0.00	-	-	-	-
108-94-1	Cyclohexanone	-	-	-	-	-	-	-	-
27208-37-3	Cyclopenta[c,d]pyrene	-	-	-	-	-	-	-	-
50-29-3	DDT	-	-	-	-	-	-	-	-
615-05-4	Diaminoanisole, 2,4-	-	-	-	-	-	-	-	-
101-80-4	Diaminodiphenyl ether, 4,4-	-	-	-	-	-	-	-	-
103-33-3	Diazene, Diphenyl	-	-	-	-	-	-	-	-
226-36-8	Dibenz(a,h)acridine	-	-	-	-	-	-	-	-
224-42-0	Dibenz(a,j)acridine	-	-	-	-	-	-	-	-
53-70-3	Dibenz[a,h]anthracene	-	-	-	-	-	-	-	-
192-65-4	Dibenzo(a,e)pyrene	-	-	-	-	-	-	-	-
189-64-0	Dibenzo(a,h)pyrene	-	-	-	-	-	-	-	-
191-30-0	Dibenzo(a,l)pyrene	-	-	-	-	-	-	-	-
194-59-2	Dibenzo(c,g)carbazole, 7H-	-	-	-	-	-	-	-	-
5385-75-1	Dibenzo[a,e]fluoranthene	-	-	-	-	-	-	-	-
189-55-9	Dibenzo[a,i]pyrene	-	-	-	-	-	-	-	-
96-12-8	Dibromo-3-chloropropane, 1	-	-	-	-	-	-	-	-
764-41-0	Dichloro-2-butene, 1,4-	-	-	-	-	-	-	-	-
1476-11-5	Dichloro-2-butene, cis-1,4-	-	-	-	-	-	-	-	-
106-46-7	Dichlorobenzene(p), 1,4-	0.00	0.00	0.00	0.00	-	-	-	-
25321-22-6	Dichlorobenzenes	0.00	0.00	0.00	0.00	-	-	-	-
91-94-1	Dichlorobenzidene, 3,3-	-	-	-	-	-	-	-	-
75-71-8	Dichlorodifluoromethane (C	0.01	0.00	0.00	0.00	-	-	-	-
75-35-4	Dichloroethylene (1,1-) (Vin	0.00	0.00	0.00	0.00	-	-	-	-
156-60-5	Dichloroethylene, trans-1,2-	548.43	240.26	35.36	19.14	-	-	-	-
542-75-6	Dichloropropene, 1,3-	-	-	-	-	-	-	-	-
78-88-6	Dichloropropene, 2,3-	-	-	-	-	-	-	-	-
62-73-7	Dichlorvos	-	-	-	-	-	-	-	-
77-73-6	Dicyclopentadiene	-	-	-	-	-	-	-	-
60-57-1	Dieldrin	-	-	-	-	-	-	-	-
0-02-4	Diesel exhaust particulate	-	-	-	-	-	-	-	-
111-42-2	Diethanolamine	-	-	-	-	-	-	-	-
112-34-5	Diethylene Glycol Monobuty	-	-	-	-	-	-	-	-
111-90-0	Diethylene Glycol Monoethy	-	-	-	-	-	-	-	-
75-37-6	Difluoroethane, 1,1-	-	-	-	-	-	-	-	-
108-20-3	Diisopropyl Ether	-	-	-	-	-	-	-	-
60-11-7	Dimethyl aminoazobenzene	-	-	-	-	-	-	-	-
68-12-2	Dimethyl formamide	-	-	-	-	-	-	-	-
108-01-0	Dimethylamino ethanol, 2-	-	-	-	-	-	-	-	-
57-97-6	Dimethylbenz[a]anthracene,	-	-	-	-	-	-	-	-
57-14-7	Dimethylhydrazine, 1,1-	-	-	-	-	-	-	-	-
42397-64-8	Dinitropyrene, 1,6- (BaP)	-	-	-	-	-	-	-	-
42397-65-9	Dinitropyrene, 1,8- (BaP)	-	-	-	-	-	-	-	-
121-14-2	Dinitrotoluene, 2,4-	-	-	-	-	-	-	-	-
123-91-1	Dioxane, 1,4- (1,4-Diethylen	-	-	-	-	-	-	-	-
122-66-7	Diphenylhydrazine, 1,2-	-	-	-	-	-	-	-	-
106-89-8	Epichlorohydrin (l-Chloro-2,	-	-	-	-	-	-	-	-
106-88-7	Epoxybutane, 1,2-	-	-	-	-	-	-	-	-
110-80-5	Ethoxyethanol, 2- (ethylene	-	-	-	-	-	-	-	-
141-78-6	Ethyl acetate	0.00	0.00	0.00	0.00	-	-	-	-
140-88-5	Ethyl Acrylate	-	-	-	-	-	-	-	-
100-41-4	Ethyl benzene	0.00	0.00	0.00	0.00	-	-	-	-
51-79-6	Ethyl carbamate (Urethane)	-	-	-	-	-	-	-	-

75-00-3	Ethyl chloride (Chloroethane	0.00	0.00	0.00	0.00	-	-	-	-
97-63-2	Ethyl Methacrylate	-	-	-	-	-	-	-	-
106-93-4	Ethylene dibromide (Dibrom	0.00	0.00	0.00	0.00	-	-	-	-
107-06-2	Ethylene dichloride (1,2-Dic	0.00	0.00	0.00	0.00	-	-	-	-
107-21-1	Ethylene glycol	-	-	-	-	-	-	-	-
75-21-8	Ethylene oxide	-	-	-	-	-	-	-	-
96-45-7	Ethylene thiourea	-	-	-	-	-	-	-	-
75-34-3	Ethylidene dichloride (1,1-D	0.00	0.00	0.00	0.00	-	-	-	-
206-44-0	Fluoranthene	-	-	-	-	-	-	-	-
FLUORIDES	Fluorides (except hydrogen	-	-	-	-	-	-	-	-
50-00-0	Formaldehyde	0.28	0.09	0.03	0.02	-	-	-	-
64-18-6	Formic Acid	-	-	-	-	-	-	-	-
111-30-8	Glutaraldehyde	-	-	-	-	-	-	-	-
0-01-2	Glycol ethers	-	-	-	-	-	-	-	-
76-44-8	Heptachlor	-	-	-	-	-	-	-	-
1024-57-3	Heptachlor epoxide	-	-	-	-	-	-	-	-
35822-46-9	Heptachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-5	Heptachlorodibenzodioxin,	-	-	-	-	-	-	-	-
67562-39-4	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
55673-89-7	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
00-08-4	Heptachlorodibenzofuran, A	-	-	-	-	-	-	-	-
142-82-5	Heptane, N	0.00	0.00	0.00	0.00	-	-	-	-
118-74-1	Hexachlorobenzene	-	-	-	-	-	-	-	-
87-68-3	Hexachlorobutadiene	0.00	0.00	0.00	0.00	-	-	-	-
608-73-1	Hexachlorocyclohexane (tec	-	-	-	-	-	-	-	-
319-84-6	Hexachlorocyclohexane, alp	-	-	-	-	-	-	-	-
319-85-7	Hexachlorocyclohexane, be	-	-	-	-	-	-	-	-
77-47-4	Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-
39227-28-6	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
57653-85-7	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
19408-74-3	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-3	Hexachlorodibenzodioxins,	-	-	-	-	-	-	-	-
70648-26-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
57117-44-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
72918-21-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
60851-34-5	Hexachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-
00-08-2	Hexachlorodibenzofurans, A	-	-	-	-	-	-	-	-
67-72-1	Hexachloroethane	-	-	-	-	-	-	-	-
822-06-0	Hexamethylene-1,6-diisocya	-	-	-	-	-	-	-	-
110-54-3	Hexane	6.71	2.19	0.65	0.42	-	-	-	-
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl	-	-	-	-	-	-	-	-
591-78-6	Hexanone-2	0.00	0.00	0.00	0.00	-	-	-	-
302-01-2	Hydrazine	-	-	-	-	-	-	-	-
10034-93-2	Hydrazine sulfate	-	-	-	-	-	-	-	-
7647-01-0	Hydrochloric acid (hydrogen	-	-	-	-	-	-	-	-
74-90-8	Hydrogen cyanide	-	-	-	-	-	-	-	-
7664-39-3	Hydrogen fluoride (Hydroflu	-	-	-	-	-	-	-	-
7783-07-5	Hydrogen selenide	-	-	-	-	-	-	-	-
7783-06-4	Hydrogen sulfide	-	-	-	-	-	-	-	-
193-39-5	Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-
5888-33-5	Isobornyl acrylate	11.36	4.59	1.40	0.80	-	-	-	-
78-59-1	Isophorone	-	-	-	-	-	-	-	-
67-63-0	Isopropyl alcohol	0.00	0.00	0.00	0.00	-	-	-	-
7439-92-1	Lead	-	-	-	-	-	-	-	-
7758-97-6	Lead Chromate	-	-	-	-	-	-	-	-
LEAD-COMP	Lead Compounds	-	-	-	-	-	-	-	-
58-89-9	Lindane (all isomers)	-	-	-	-	-	-	-	-
108-31-6	Maleic anhydride	-	-	-	-	-	-	-	-
7439-96-5	Manganese	0.00	0.00	0.00	0.00	-	-	-	-
MANGANESE	Manganese Compounds	-	-	-	-	-	-	-	-
7439-97-6	Mercury (elemental)	0.00	0.00	0.00	0.00	-	-	-	-
MERCURY-C	Mercury Compounds	-	-	-	-	-	-	-	-
126-98-7	Methacrylonitrile	-	-	-	-	-	-	-	-
67-56-1	Methanol	-	-	-	-	-	-	-	-
109-86-4	Methoxyethanol, 2- (ethylen	-	-	-	-	-	-	-	-
96-33-3	Methyl acrylate	-	-	-	-	-	-	-	-
110-49-6	Methyl Cellosolve Acetate	-	-	-	-	-	-	-	-
74-87-3	Methyl chloride (Chlorometh	0.00	0.00	0.00	0.00	-	-	-	-
71-55-6	Methyl chloroform (1,1,1-Tri	0.02	0.01	0.00	0.00	-	-	-	-
78-93-3	Methyl ethyl ketone (2-Buta	0.00	0.00	0.00	0.00	-	-	-	-
60-34-4	Methyl Hydrazine	-	-	-	-	-	-	-	-
108-10-1	Methyl isobutyl ketone (Hex	0.00	0.00	0.00	0.00	-	-	-	-
624-83-9	Methyl isocyanate	-	-	-	-	-	-	-	-
80-62-6	Methyl methacrylate	-	-	-	-	-	-	-	-
1634-04-4	Methyl tert butyl ether	0.00	0.00	0.00	0.00	-	-	-	-
56-49-5	Methylcholanthrene, 3-	-	-	-	-	-	-	-	-
3697-24-3	Methylchrysene, 5-	-	-	-	-	-	-	-	-
101-14-4	Methylene bis(2-chloroanilin	-	-	-	-	-	-	-	-
74-95-3	Methylene Bromide	-	-	-	-	-	-	-	-
75-09-2	Methylene chloride (Dichlor	0.00	0.00	0.00	0.00	-	-	-	-
101-68-8	Methylene diphenyl diisocya	-	-	-	-	-	-	-	-
101-77-9	Methylenedianiline, 4,4-	-	-	-	-	-	-	-	-
90-94-8	Michler's ketone	-	-	-	-	-	-	-	-
10595-95-6	N- Nitrosomethylethylamine	-	-	-	-	-	-	-	-
924-16-3	N-Nitrosodi-n-butylamine	-	-	-	-	-	-	-	-
621-64-7	N-Nitrosodi-n-propylamine	-	-	-	-	-	-	-	-
55-18-5	N-Nitrosodiethylamine	-	-	-	-	-	-	-	-
62-75-9	N-Nitrosodimethylamine	-	-	-	-	-	-	-	-
86-30-6	N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-
59-89-2	N-Nitrosomorpholine	-	-	-	-	-	-	-	-
100-75-4	N-Nitrosopiperidine	-	-	-	-	-	-	-	-

111-84-2	N-Nonane	-	-	-	-	-	-	-	-
64724-95-6	Naphtha, High Flash Aroma	-	-	-	-	-	-	-	-
91-20-3	Naphthalene	0.00	0.00	0.00	0.00	-	-	-	-
193-09-9	Naphtho[2,3-e]pyrene	-	-	-	-	-	-	-	-
7440-02-0	Nickel	0.01	0.00	0.00	0.00	-	-	-	-
NICKEL-COM	Nickel Compounds	-	-	-	-	-	-	-	-
1313-99-1	Nickel oxide	-	-	-	-	-	-	-	-
0-02-5	Nickel refinery dust from the	-	-	-	-	-	-	-	-
12035-72-2	Nickel sulfide (NI3S2)	-	-	-	-	-	-	-	-
7697-37-2	Nitric acid	-	-	-	-	-	-	-	-
139-13-9	Nitrilotriacetic acid	-	-	-	-	-	-	-	-
18662-53-8	Nitrilotriacetic acid, trisodiu	-	-	-	-	-	-	-	-
602-87-9	Nitroacenaphthene, 5-	-	-	-	-	-	-	-	-
88-74-4	Nitroaniline, 2-	-	-	-	-	-	-	-	-
100-01-6	Nitroaniline, 4-	-	-	-	-	-	-	-	-
98-95-3	Nitrobenzene	-	-	-	-	-	-	-	-
7496-02-8	Nitrochrysene, 6-	-	-	-	-	-	-	-	-
607-57-8	Nitrofluorene, 2-	-	-	-	-	-	-	-	-
10102-44-0	Nitrogen dioxide (NO2)	149.83	121.81	35.88	9.50	-	-	-	-
75-52-5	Nitromethane	-	-	-	-	-	-	-	-
79-46-9	Nitropropane, 2-	-	-	-	-	-	-	-	-
5522-43-0	Nitropyrene, 1-	-	-	-	-	-	-	-	-
57835-92-4	Nitropyrene, 4-	-	-	-	-	-	-	-	-
156-10-5	Nitrosodiphenylamine, p-	-	-	-	-	-	-	-	-
3268-87-9	Octachlorodibenzo-p-dioxin,	-	-	-	-	-	-	-	-
39001-02-0	Octachlorodibenzofuran, 1,2	-	-	-	-	-	-	-	-
10028-15-6	Ozone	-	-	-	-	-	-	-	-
74472-37-0	PCB 114 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
31508-00-6	PCB 118 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
65510-44-3	PCB 123 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
57465-28-8	PCB 126 (3,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
38380-0804	PCB 156 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Hep	-	-	-	-	-	-	-	-
32598-13-3	PCB 77 (3,3,4,4-Tetrachloro	-	-	-	-	-	-	-	-
70362-50-4	PCB 81 (3,4,4,5 Tetrachloro	-	-	-	-	-	-	-	-
32598-14-4	PCB105 (2,3,3,4,4 Pentachl	-	-	-	-	-	-	-	-
40321-76-4	Pentachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-1	Pentachlorodibenzodioxins,	-	-	-	-	-	-	-	-
57117-41-6	Pentachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
57117-31-4	Pentachlorodibenzofuran, 2	-	-	-	-	-	-	-	-
00-09-0	Pentachlorodibenzofurans,	-	-	-	-	-	-	-	-
87-86-5	Pentachlorophenol	-	-	-	-	-	-	-	-
109-66-0	Pentane, n-	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	9.69	3.40	1.36	0.91	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
85-01-8	Phenanthrene	-	-	-	-	-	-	-	-
108-95-2	Phenol	-	-	-	-	-	-	-	-
75-44-5	Phosgene	-	-	-	-	-	-	-	-
7803-51-2	Phosphine	-	-	-	-	-	-	-	-
7664-38-2	Phosphoric acid	-	-	-	-	-	-	-	-
85-44-9	Phthalic anhydride	-	-	-	-	-	-	-	-
59536-65-1	Polybrominated Biphenyls	-	-	-	-	-	-	-	-
1336-36-3	Polychlorinated biphenyls (A	-	-	-	-	-	-	-	-
00-08-0	Polychlorinated Dibenzo-P-	-	-	-	-	-	-	-	-
00-05-0	Polychlorinated Dibenzodio	-	-	-	-	-	-	-	-
00-05-1	Polychlorinated Dibenzofura	-	-	-	-	-	-	-	-
130498-29-2	Polycyclic Aromatic Hydroca	-	-	-	-	-	-	-	-
00-01-7	Polycyclic Organic Matter (P	0.00	0.00	0.00	0.00	-	-	-	-
9016-87-9	Polymeric diphenylmethane	-	-	-	-	-	-	-	-
7758-01-2	Potassium bromate	-	-	-	-	-	-	-	-
1120-71-4	Propane sultone, 1,3-	-	-	-	-	-	-	-	-
57-57-8	Propiolactone, beta-	-	-	-	-	-	-	-	-
123-38-6	Propionaldehyde	-	-	-	-	-	-	-	-
115-07-1	Propylene	0.00	0.00	0.00	0.00	-	-	-	-
78-87-5	Propylene dichloride (1,2-Di	0.00	0.00	0.00	0.00	-	-	-	-
107-98-2	Propylene Glycol Monometh	-	-	-	-	-	-	-	-
75-56-9	Propylene oxide	-	-	-	-	-	-	-	-
930-55-2	Pyrrolidine, 1-Nitroso-	-	-	-	-	-	-	-	-
7782-49-2	Selenium	0.00	0.00	0.00	0.00	-	-	-	-
0-01-9	Selenium Compounds	-	-	-	-	-	-	-	-
7631-86-9	Silica (crystalline, respirable	-	-	-	-	-	-	-	-
1310-73-2	Sodium hydroxide	-	-	-	-	-	-	-	-
10588-01-9	Sodium Dichromate	-	-	-	-	-	-	-	-
7789-06-2	Strontium chromate	-	-	-	-	-	-	-	-
100-42-5	Styrene	0.00	0.00	0.00	0.00	-	-	-	-
96-09-3	Styrene oxide	-	-	-	-	-	-	-	-
14808-79-8	Sulfates	-	-	-	-	-	-	-	-
126-33-0	Sulfolane	-	-	-	-	-	-	-	-
7446-09-5	Sulfur dioxide	87.64	20.92	5.13	2.40	-	-	-	-
7664-93-9	Sulfuric acid (aerosol forms	-	-	-	-	-	-	-	-
8014-95-7	Sulfuric Acid mixture w. sulf	-	-	-	-	-	-	-	-
00-09-1	TCDD Eqivalents, 2,3,7,8-	-	-	-	-	-	-	-	-
540-88-5	Tert-Butyl Acetate	-	-	-	-	-	-	-	-
1746-01-6	Tetrachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-8	Tetrachlorodibenzodioxins,	-	-	-	-	-	-	-	-
51207-31-9	Tetrachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-

00-08-6	Tetrachlorodibenzofurans, A	-	-	-	-	-	-	-	-
630-20-6	Tetrachloroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
79-34-5	Tetrachloroethane, 1,1,2,2-	0.00	0.00	0.00	0.00	-	-	-	-
127-18-4	Tetrachloroethylene (Perchl	0.00	0.00	0.00	0.00	-	-	-	-
811-97-2	Tetrafluoroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
109-99-9	Tetrahydrofuran	0.00	0.00	0.00	0.00	-	-	-	-
62-55-5	Thioacetamide	-	-	-	-	-	-	-	-
62-56-6	Thiourea	-	-	-	-	-	-	-	-
108-88-3	Toluene	0.01	0.00	0.00	0.00	-	-	-	-
584-84-9	Toluene-2,4-diisocyanate	-	-	-	-	-	-	-	-
91-08-7	Toluene-2,6-diisocyanate	-	-	-	-	-	-	-	-
95-80-7	Toluene diamine, 2,4-	-	-	-	-	-	-	-	-
26471-62-5	Toluenediisocyanate (mixed	-	-	-	-	-	-	-	-
95-53-4	Toluidine, o- (Methylaniline,	-	-	-	-	-	-	-	-
8001-35-2	Toxaphene (chlorinated ca	-	-	-	-	-	-	-	-
10061-02-6	trans-1,3-Dichloropropene	0.00	0.00	0.00	0.00	-	-	-	-
120-82-1	Trichlorobenzene, 1,2,4-	0.01	0.00	0.00	0.00	-	-	-	-
79-00-5	Trichloroethane, 1,1,2-	0.00	0.00	0.00	0.00	-	-	-	-
79-01-6	Trichloroethylene (TCE)	0.01	0.00	0.00	0.00	-	-	-	-
75-69-4	Trichlorofluoromethane (CF	0.00	0.00	0.00	0.00	-	-	-	-
88-06-2	Trichlorophenol, 2,4,6-	-	-	-	-	-	-	-	-
96-18-4	Trichloropropane, 1,2,3-	-	-	-	-	-	-	-	-
96-19-5	Trichloropropene, 1,2,3-	-	-	-	-	-	-	-	-
76-13-1	Trichlorotrifluoroethane, 1,1	0.00	0.00	0.00	0.00	-	-	-	-
121-44-8	Triethylamine	-	-	-	-	-	-	-	-
420-46-2	Trifluoroethane, 1,1,1-	-	-	-	-	-	-	-	-
526-73-8	Trimethylbenzene, 1,2,3-	-	-	-	-	-	-	-	-
95-63-6	Trimethylbenzene, 1,2,4-	0.00	0.00	0.00	0.00	-	-	-	-
108-67-8	Trimethylbenzene, 1,3,5-	0.00	0.00	0.00	0.00	-	-	-	-
URANIUM-SO	Uranium (Soluble Salts)	-	-	-	-	-	-	-	-
7440-61-1	Uranium, Insoluble Compou	-	-	-	-	-	-	-	-
7440-62-2	Vanadium and Compounds	-	-	-	-	-	-	-	-
1314-62-1	Vanadium Pentoxide, (V2O	-	-	-	-	-	-	-	-
108-05-4	Vinyl acetate	0.00	0.00	0.00	0.00	-	-	-	-
593-60-2	Vinyl bromide	-	-	-	-	-	-	-	-
75-01-4	Vinyl chloride	0.00	0.00	0.00	0.00	-	-	-	-
1330-20-7	Xylenes	0.00	0.00	0.00	0.00	-	-	-	-
108-38-3	Xylenes, m-	-	-	-	-	-	-	-	-
95-47-6	Xylenes, o-	-	-	-	-	-	-	-	-
106-42-3	Xylenes, p-	-	-	-	-	-	-	-	-
13530-65-9	Zinc chromate	-	-	-	-	-	-	-	-

RASS version: 2020-12

No inputs needed on this page

Air Concentrations in ug/m3

		Stack #2				Stack #3			
CAS# or MPCA#	**Chemical Name**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**
202-94-8	11H-Benz[b,c]aceanthrylen	-	-	-	-	-	-	-	-
202-98-2	4H-Cyclopenta[d,e,f]chryse	-	-	-	-	-	-	-	-
75-07-0	Acetaldehyde	-	-	-	-	-	-	-	-
60-35-5	Acetamide	-	-	-	-	-	-	-	-
67-64-1	Acetone	-	-	-	-	-	-	-	-
75-86-5	Acetone Cyanohydrin	-	-	-	-	-	-	-	-
75-05-8	Acetonitrile	-	-	-	-	-	-	-	-
53-96-3	Acetylaminofluorene, 2-	-	-	-	-	-	-	-	-
107-02-8	Acrolein	-	-	-	-	-	-	-	-
79-06-1	Acrylamide	-	-	-	-	-	-	-	-
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-	-	-	-	-	-	-	-	-
79-10-7	Acrylic acid	-	-	-	-	-	-	-	-
107-13-1	Acrylonitrile	-	-	-	-	-	-	-	-
111-69-3	Adiponitrile	-	-	-	-	-	-	-	-
ALDEHYDES	Aldehydes	-	-	-	-	-	-	-	-
309-00-2	Aldrin	-	-	-	-	-	-	-	-
ALIPHATIC-M	Aliphatic Hydrocarbon Strea	-	-	-	-	-	-	-	-
107-05-1	Allyl chloride	-	-	-	-	-	-	-	-
7429-90-5	Aluminum	-	-	-	-	-	-	-	-
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3	-	-	-	-	-	-	-	-
6109-97-3	Amino-9-ethylcarbazolehydr	-	-	-	-	-	-	-	-
117-79-3	Aminoanthraquinone, 2-	-	-	-	-	-	-	-	-
7664-41-7	Ammonia	-	-	-	-	-	-	-	-
62-53-3	Aniline	-	-	-	-	-	-	-	-
191-26-4	Anthanthrene	-	-	-	-	-	-	-	-
7440-36-0	Antimony	-	-	-	-	-	-	-	-
ANTIMONY-C	Antimony Compounds	-	-	-	-	-	-	-	-
1309-64-4	Antimony trioxide	-	-	-	-	-	-	-	-
140-57-8	Aramite	-	-	-	-	-	-	-	-
7440-38-2	Arsenic	-	-	-	-	-	-	-	-
ARSENIC-CO	Arsenic Compounds	-	-	-	-	-	-	-	-
1327-53-3	Arsenic Trioxide	-	-	-	-	-	-	-	-
7784-42-1	Arsine	-	-	-	-	-	-	-	-
1332-21-4	Asbestos (units in fibers)	-	-	-	-	-	-	-	-
1332-21-4-LA	Asbestos, Libby Amphibole	-	-	-	-	-	-	-	-
123-77-3	Azodicarbonamide	-	-	-	-	-	-	-	-
10294-40-3	Barium Chromate	-	-	-	-	-	-	-	-
199-54-2	Benz[e]aceanthrylene	-	-	-	-	-	-	-	-
202-33-5	Benz[j]aceanthrylene	-	-	-	-	-	-	-	-
211-91-6	Benz[l]aceanthrylene	-	-	-	-	-	-	-	-
71-43-2	Benzene	-	-	-	-	-	-	-	-
92-87-5	Benzidine	-	-	-	-	-	-	-	-
205-82-3	Benzo(j)fluoranthene	-	-	-	-	-	-	-	-
207-08-9	Benzo(k)fluoranthene	-	-	-	-	-	-	-	-
56-55-3	Benzo[a]anthracene	-	-	-	-	-	-	-	-
50-32-8	Benzo[a]pyrene	-	-	-	-	-	-	-	-
205-99-2	Benzo[b]fluoranthene	-	-	-	-	-	-	-	-
205-12-9	Benzo[c]fluorene	-	-	-	-	-	-	-	-
191-24-2	Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-
65-85-0	Benzoic Acid	-	-	-	-	-	-	-	-
100-44-7	Benzyl chloride	-	-	-	-	-	-	-	-
7440-41-7	Beryllium	-	-	-	-	-	-	-	-
BERYLLIUM-	Beryllium Compounds	-	-	-	-	-	-	-	-
13510-49-1	Beryllium sulfate	-	-	-	-	-	-	-	-
111-44-4	Bis(2-chloroethyl)ether	-	-	-	-	-	-	-	-
117-81-7	Bis(2-ethylhexyl)phthalate (	-	-	-	-	-	-	-	-
542-88-1	Bis(chloromethyl)ether	-	-	-	-	-	-	-	-
7440-42-8	Boron And Borates Only	-	-	-	-	-	-	-	-
10294-34-5	Boron Trichloride	-	-	-	-	-	-	-	-
7637-07-2	Boron Trifluoride	-	-	-	-	-	-	-	-
108-86-1	Bromobenzene	-	-	-	-	-	-	-	-
74-97-5	Bromochloromethane	-	-	-	-	-	-	-	-
75-27-4	Bromodichloromethane	-	-	-	-	-	-	-	-
75-25-2	Bromoform	-	-	-	-	-	-	-	-
74-83-9	Bromomethane	-	-	-	-	-	-	-	-
106-94-5	Bromopropane, 1-	-	-	-	-	-	-	-	-
106-99-0	Butadiene, 1,3-	-	-	-	-	-	-	-	-
78-92-2	Butyl alcohol, sec-	-	-	-	-	-	-	-	-
111-76-2	Butyl Cellosolve (ethylene g	-	-	-	-	-	-	-	-
25013-16-5	Butylated hydroxyanisole	-	-	-	-	-	-	-	-
3068-88-0	Butyrolactone, beta-	-	-	-	-	-	-	-	-
7440-43-9	Cadmium	-	-	-	-	-	-	-	-
CADMIUM-C	Cadmium Compounds	-	-	-	-	-	-	-	-
13765-19-0	Calcium Chromate	-	-	-	-	-	-	-	-
105-60-2	Caprolactum	-	-	-	-	-	-	-	-
75-15-0	Carbon disulfide	-	-	-	-	-	-	-	-
630-08-0	Carbon Monoxide	-	-	-	-	-	-	-	-
56-23-5	Carbon tetrachloride	-	-	-	-	-	-	-	-
463-58-1	Carbonyl sulfide	-	-	-	-	-	-	-	-
111-15-9	Cellosolve Acetate (ethylen	-	-	-	-	-	-	-	-
1306-38-3	Cerium Oxide and Cerium	-	-	-	-	-	-	-	-
12789-03-6	Chlordane or (57-74-9)	-	-	-	-	-	-	-	-
115-28-6	Chlorendic acid	-	-	-	-	-	-	-	-
108171-26-2	Chlorinated Paraffins (C12,	-	-	-	-	-	-	-	-
7782-50-5	Chlorine	-	-	-	-	-	-	-	-

10049-04-4	Chlorine Oxide (CLO2)	-	-	-	-	-	-	-	-
75-68-3	Chloro-1,1-difluoroethane, 1	-	-	-	-	-	-	-	-
563-47-3	Chloro-2-methylpropene, 3-	-	-	-	-	-	-	-	-
95-83-0	Chloro-o-phenylenediamine	-	-	-	-	-	-	-	-
95-69-2	Chloro-o-toluidine, p-	-	-	-	-	-	-	-	-
532-27-4	Chloroacetophenone, 2-	-	-	-	-	-	-	-	-
108-90-7	Chlorobenzene	-	-	-	-	-	-	-	-
98-56-6	Chlorobenzotrifluoride, 4-	-	-	-	-	-	-	-	-
75-45-6	Chlorodifluoromethane (HC	-	-	-	-	-	-	-	-
67-66-3	Chloroform	-	-	-	-	-	-	-	-
107-30-2	Chloromethyl Methyl Ether	-	-	-	-	-	-	-	-
88-73-3	Chloronitrobenzene, o-	-	-	-	-	-	-	-	-
100-00-5	Chloronitrobenzene, p-	-	-	-	-	-	-	-	-
76-06-2	Chloropicrin	-	-	-	-	-	-	-	-
126-99-8	Chloroprene	-	-	-	-	-	-	-	-
1333-82-0	Chromic acid mists and diss	-	-	-	-	-	-	-	-
7440-47-3	Chromium	-	-	-	-	-	-	-	-
18540-29-9	Chromium (Hexavalent)	-	-	-	-	-	-	-	-
18540-29-9-p	Chromium (Hexavalent) - P	-	-	-	-	-	-	-	-
CHROM-COM	Chromium Compounds	-	-	-	-	-	-	-	-
16065-83-1	Chromium(III) Compounds	-	-	-	-	-	-	-	-
218-01-9	Chrysene (Benzo(a)phenan	-	-	-	-	-	-	-	-
87-29-6	Cinnamyl anthranilate	-	-	-	-	-	-	-	-
10061-01-5	cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-
8007-45-2	Coal Tar	-	-	-	-	-	-	-	-
7440-48-4	Cobalt	-	-	-	-	-	-	-	-
0-00-7	Coke Oven Emissions	-	-	-	-	-	-	-	-
7440-50-8	Copper	-	-	-	-	-	-	-	-
COPPER-CO	Copper Compounds	-	-	-	-	-	-	-	-
120-71-8	Cresidine, p-	-	-	-	-	-	-	-	-
108-39-4	Cresol, m-	-	-	-	-	-	-	-	-
95-48-7	Cresol, o-	-	-	-	-	-	-	-	-
106-44-5	Cresol, p-	-	-	-	-	-	-	-	-
1319-77-3	Cresols/Cresylic acid (isome	-	-	-	-	-	-	-	-
98-82-8	Cumene	-	-	-	-	-	-	-	-
135-20-6	Cupferron	-	-	-	-	-	-	-	-
57-12-5	Cyanide (Cyanide ion, Inorg	-	-	-	-	-	-	-	-
CYANIDE-CO	Cyanide Compounds	-	-	-	-	-	-	-	-
110-82-7	Cyclohexane	-	-	-	-	-	-	-	-
108-94-1	Cyclohexanone	-	-	-	-	-	-	-	-
27208-37-3	Cyclopenta[c,d]pyrene	-	-	-	-	-	-	-	-
50-29-3	DDT	-	-	-	-	-	-	-	-
615-05-4	Diaminoanisole, 2,4-	-	-	-	-	-	-	-	-
101-80-4	Diaminodiphenyl ether, 4,4-	-	-	-	-	-	-	-	-
103-33-3	Diazene, Diphenyl	-	-	-	-	-	-	-	-
226-36-8	Dibenz(a,h)acridine	-	-	-	-	-	-	-	-
224-42-0	Dibenz(a,j)acridine	-	-	-	-	-	-	-	-
53-70-3	Dibenz[a,h]anthracene	-	-	-	-	-	-	-	-
192-65-4	Dibenzo(a,e)pyrene	-	-	-	-	-	-	-	-
189-64-0	Dibenzo(a,h)pyrene	-	-	-	-	-	-	-	-
191-30-0	Dibenzo(a,l)pyrene	-	-	-	-	-	-	-	-
194-59-2	Dibenzo(c,g)carbazole, 7H-	-	-	-	-	-	-	-	-
5385-75-1	Dibenzo[a,e]fluoranthene	-	-	-	-	-	-	-	-
189-55-9	Dibenzo[a,i]pyrene	-	-	-	-	-	-	-	-
96-12-8	Dibromo-3-chloropropane, 1	-	-	-	-	-	-	-	-
764-41-0	Dichloro-2-butene, 1,4-	-	-	-	-	-	-	-	-
1476-11-5	Dichloro-2-butene, cis-1,4-	-	-	-	-	-	-	-	-
106-46-7	Dichlorobenzene(p), 1,4-	-	-	-	-	-	-	-	-
25321-22-6	Dichlorobenzenes	-	-	-	-	-	-	-	-
91-94-1	Dichlorobenzidene, 3,3-	-	-	-	-	-	-	-	-
75-71-8	Dichlorodifluoromethane (C	-	-	-	-	-	-	-	-
75-35-4	Dichloroethylene (1,1-) (Vin	-	-	-	-	-	-	-	-
156-60-5	Dichloroethylene, trans-1,2-	535.21	235.75	34.00	18.45	-	-	-	-
542-75-6	Dichloropropene, 1,3-	-	-	-	-	-	-	-	-
78-88-6	Dichloropropene, 2,3-	-	-	-	-	-	-	-	-
62-73-7	Dichlorvos	-	-	-	-	-	-	-	-
77-73-6	Dicyclopentadiene	-	-	-	-	-	-	-	-
60-57-1	Dieldrin	-	-	-	-	-	-	-	-
0-02-4	Diesel exhaust particulate	-	-	-	-	-	-	-	-
111-42-2	Diethanolamine	-	-	-	-	-	-	-	-
112-34-5	Diethylene Glycol Monobuty	-	-	-	-	-	-	-	-
111-90-0	Diethylene Glycol Monoethy	-	-	-	-	-	-	-	-
75-37-6	Difluoroethane, 1,1-	-	-	-	-	-	-	-	-
108-20-3	Diisopropyl Ether	-	-	-	-	-	-	-	-
60-11-7	Dimethyl aminoazobenzene	-	-	-	-	-	-	-	-
68-12-2	Dimethyl formamide	-	-	-	-	-	-	-	-
108-01-0	Dimethylamino ethanol, 2-	-	-	-	-	-	-	-	-
57-97-6	Dimethylbenz[a]anthracene,	-	-	-	-	-	-	-	-
57-14-7	Dimethylhydrazine, 1,1-	-	-	-	-	-	-	-	-
42397-64-8	Dinitropyrene, 1,6- (BaP)	-	-	-	-	-	-	-	-
42397-65-9	Dinitropyrene, 1,8- (BaP)	-	-	-	-	-	-	-	-
121-14-2	Dinitrotoluene, 2,4-	-	-	-	-	-	-	-	-
123-91-1	Dioxane, 1,4- (1,4-Diethylen	-	-	-	-	-	-	-	-
122-66-7	Diphenylhydrazine, 1,2-	-	-	-	-	-	-	-	-
106-89-8	Epichlorohydrin (l-Chloro-2,	-	-	-	-	-	-	-	-
106-88-7	Epoxybutane, 1,2-	-	-	-	-	-	-	-	-
110-80-5	Ethoxyethanol, 2- (ethylene	-	-	-	-	-	-	-	-
141-78-6	Ethyl acetate	-	-	-	-	-	-	-	-
140-88-5	Ethyl Acrylate	-	-	-	-	-	-	-	-
100-41-4	Ethyl benzene	-	-	-	-	-	-	-	-
51-79-6	Ethyl carbamate (Urethane)	-	-	-	-	-	-	-	-

75-00-3	Ethyl chloride (Chloroethane	-	-	-	-	-	-	-	-
97-63-2	Ethyl Methacrylate	-	-	-	-	-	-	-	-
106-93-4	Ethylene dibromide (Dibrom	-	-	-	-	-	-	-	-
107-06-2	Ethylene dichloride (1,2-Dic	-	-	-	-	-	-	-	-
107-21-1	Ethylene glycol	-	-	-	-	-	-	-	-
75-21-8	Ethylene oxide	-	-	-	-	-	-	-	-
96-45-7	Ethylene thiourea	-	-	-	-	-	-	-	-
75-34-3	Ethylidene dichloride (1,1-D	-	-	-	-	-	-	-	-
206-44-0	Fluoranthene	-	-	-	-	-	-	-	-
FLUORIDES	Fluorides (except hydrogen	-	-	-	-	-	-	-	-
50-00-0	Formaldehyde	-	-	-	-	-	-	-	-
64-18-6	Formic Acid	-	-	-	-	-	-	-	-
111-30-8	Glutaraldehyde	-	-	-	-	-	-	-	-
0-01-2	Glycol ethers	-	-	-	-	-	-	-	-
76-44-8	Heptachlor	-	-	-	-	-	-	-	-
1024-57-3	Heptachlor epoxide	-	-	-	-	-	-	-	-
35822-46-9	Heptachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-5	Heptachlorodibenzodioxin,	-	-	-	-	-	-	-	-
67562-39-4	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
55673-89-7	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
00-08-4	Heptachlorodibenzofuran, A	-	-	-	-	-	-	-	-
142-82-5	Heptane, N	-	-	-	-	-	-	-	-
118-74-1	Hexachlorobenzene	-	-	-	-	-	-	-	-
87-68-3	Hexachlorobutadiene	-	-	-	-	-	-	-	-
608-73-1	Hexachlorocyclohexane (tec	-	-	-	-	-	-	-	-
319-84-6	Hexachlorocyclohexane, alp	-	-	-	-	-	-	-	-
319-85-7	Hexachlorocyclohexane, be	-	-	-	-	-	-	-	-
77-47-4	Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-
39227-28-6	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
57653-85-7	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
19408-74-3	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-3	Hexachlorodibenzodioxins,	-	-	-	-	-	-	-	-
70648-26-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
57117-44-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
72918-21-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
60851-34-5	Hexachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-
00-08-2	Hexachlorodibenzofurans, A	-	-	-	-	-	-	-	-
67-72-1	Hexachloroethane	-	-	-	-	-	-	-	-
822-06-0	Hexamethylene-1,6-diisocya	-	-	-	-	-	-	-	-
110-54-3	Hexane	-	-	-	-	-	-	-	-
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl	-	-	-	-	-	-	-	-
591-78-6	Hexanone-2	-	-	-	-	-	-	-	-
302-01-2	Hydrazine	-	-	-	-	-	-	-	-
10034-93-2	Hydrazine sulfate	-	-	-	-	-	-	-	-
7647-01-0	Hydrochloric acid (hydrogen	-	-	-	-	-	-	-	-
74-90-8	Hydrogen cyanide	-	-	-	-	-	-	-	-
7664-39-3	Hydrogen fluoride (Hydroflu	-	-	-	-	-	-	-	-
7783-07-5	Hydrogen selenide	-	-	-	-	-	-	-	-
7783-06-4	Hydrogen sulfide	-	-	-	-	-	-	-	-
193-39-5	Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-
5888-33-5	Isobornyl acrylate	7.56	3.33	0.97	0.53	-	-	-	-
78-59-1	Isophorone	-	-	-	-	-	-	-	-
67-63-0	Isopropyl alcohol	-	-	-	-	-	-	-	-
7439-92-1	Lead	-	-	-	-	-	-	-	-
7758-97-6	Lead Chromate	-	-	-	-	-	-	-	-
LEAD-COMP	Lead Compounds	-	-	-	-	-	-	-	-
58-89-9	Lindane (all isomers)	-	-	-	-	-	-	-	-
108-31-6	Maleic anhydride	-	-	-	-	-	-	-	-
7439-96-5	Manganese	-	-	-	-	-	-	-	-
MANGANESE	Manganese Compounds	-	-	-	-	-	-	-	-
7439-97-6	Mercury (elemental)	-	-	-	-	-	-	-	-
MERCURY-C	Mercury Compounds	-	-	-	-	-	-	-	-
126-98-7	Methacrylonitrile	-	-	-	-	-	-	-	-
67-56-1	Methanol	-	-	-	-	-	-	-	-
109-86-4	Methoxyethanol, 2- (ethylen	-	-	-	-	-	-	-	-
96-33-3	Methyl acrylate	-	-	-	-	-	-	-	-
110-49-6	Methyl Cellosolve Acetate	-	-	-	-	-	-	-	-
74-87-3	Methyl chloride (Chlorometh	-	-	-	-	-	-	-	-
71-55-6	Methyl chloroform (1,1,1-Tri	-	-	-	-	-	-	-	-
78-93-3	Methyl ethyl ketone (2-Buta	-	-	-	-	-	-	-	-
60-34-4	Methyl Hydrazine	-	-	-	-	-	-	-	-
108-10-1	Methyl isobutyl ketone (Hex	-	-	-	-	-	-	-	-
624-83-9	Methyl isocyanate	-	-	-	-	-	-	-	-
80-62-6	Methyl methacrylate	-	-	-	-	-	-	-	-
1634-04-4	Methyl tert butyl ether	-	-	-	-	-	-	-	-
56-49-5	Methylcholanthrene, 3-	-	-	-	-	-	-	-	-
3697-24-3	Methylchrysene, 5-	-	-	-	-	-	-	-	-
101-14-4	Methylene bis(2-chloroanilin	-	-	-	-	-	-	-	-
74-95-3	Methylene Bromide	-	-	-	-	-	-	-	-
75-09-2	Methylene chloride (Dichlor	-	-	-	-	-	-	-	-
101-68-8	Methylene diphenyl diisocya	-	-	-	-	-	-	-	-
101-77-9	Methylenedianiline, 4,4-	-	-	-	-	-	-	-	-
90-94-8	Michler's ketone	-	-	-	-	-	-	-	-
10595-95-6	N- Nitrosomethylethylamine	-	-	-	-	-	-	-	-
924-16-3	N-Nitrosodi-n-butylamine	-	-	-	-	-	-	-	-
621-64-7	N-Nitrosodi-n-propylamine	-	-	-	-	-	-	-	-
55-18-5	N-Nitrosodiethylamine	-	-	-	-	-	-	-	-
62-75-9	N-Nitrosodimethylamine	-	-	-	-	-	-	-	-
86-30-6	N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-
59-89-2	N-Nitrosomorpholine	-	-	-	-	-	-	-	-
100-75-4	N-Nitrosopiperidine	-	-	-	-	-	-	-	-

111-84-2	N-Nonane	-	-	-	-	-	-	-	-
64724-95-6	Naphtha, High Flash Aroma	-	-	-	-	-	-	-	-
91-20-3	Naphthalene	-	-	-	-	-	-	-	-
193-09-9	Naphtho[2,3-e]pyrene	-	-	-	-	-	-	-	-
7440-02-0	Nickel	-	-	-	-	-	-	-	-
NICKEL-COM	Nickel Compounds	-	-	-	-	-	-	-	-
1313-99-1	Nickel oxide	-	-	-	-	-	-	-	-
0-02-5	Nickel refinery dust from the	-	-	-	-	-	-	-	-
12035-72-2	Nickel sulfide (NI3S2)	-	-	-	-	-	-	-	-
7697-37-2	Nitric acid	-	-	-	-	-	-	-	-
139-13-9	Nitrilotriacetic acid	-	-	-	-	-	-	-	-
18662-53-8	Nitrilotriacetic acid, trisodiu	-	-	-	-	-	-	-	-
602-87-9	Nitroacenaphthene, 5-	-	-	-	-	-	-	-	-
88-74-4	Nitroaniline, 2-	-	-	-	-	-	-	-	-
100-01-6	Nitroaniline, 4-	-	-	-	-	-	-	-	-
98-95-3	Nitrobenzene	-	-	-	-	-	-	-	-
7496-02-8	Nitrochrysene, 6-	-	-	-	-	-	-	-	-
607-57-8	Nitrofluorene, 2-	-	-	-	-	-	-	-	-
10102-44-0	Nitrogen dioxide (NO2)	-	-	-	-	-	-	-	-
75-52-5	Nitromethane	-	-	-	-	-	-	-	-
79-46-9	Nitropropane, 2-	-	-	-	-	-	-	-	-
5522-43-0	Nitropyrene, 1-	-	-	-	-	-	-	-	-
57835-92-4	Nitropyrene, 4-	-	-	-	-	-	-	-	-
156-10-5	Nitrosodiphenylamine, p-	-	-	-	-	-	-	-	-
3268-87-9	Octachlorodibenzo-p-dioxin,	-	-	-	-	-	-	-	-
39001-02-0	Octachlorodibenzofuran, 1,2	-	-	-	-	-	-	-	-
10028-15-6	Ozone	-	-	-	-	-	-	-	-
74472-37-0	PCB 114 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
31508-00-6	PCB 118 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
65510-44-3	PCB 123 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
57465-28-8	PCB 126 (3,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
38380-0804	PCB 156 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Hep	-	-	-	-	-	-	-	-
32598-13-3	PCB 77 (3,3,4,4-Tetrachloro	-	-	-	-	-	-	-	-
70362-50-4	PCB 81 (3,4,4,5 Tetrachloro	-	-	-	-	-	-	-	-
32598-14-4	PCB105 (2,3,3,4,4 Pentachl	-	-	-	-	-	-	-	-
40321-76-4	Pentachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-1	Pentachlorodibenzodioxins,	-	-	-	-	-	-	-	-
57117-41-6	Pentachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
57117-31-4	Pentachlorodibenzofuran, 2	-	-	-	-	-	-	-	-
00-09-0	Pentachlorodibenzofurans,	-	-	-	-	-	-	-	-
87-86-5	Pentachlorophenol	-	-	-	-	-	-	-	-
109-66-0	Pentane, n-	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
85-01-8	Phenanthrene	-	-	-	-	-	-	-	-
108-95-2	Phenol	-	-	-	-	-	-	-	-
75-44-5	Phosgene	-	-	-	-	-	-	-	-
7803-51-2	Phosphine	-	-	-	-	-	-	-	-
7664-38-2	Phosphoric acid	-	-	-	-	-	-	-	-
85-44-9	Phthalic anhydride	-	-	-	-	-	-	-	-
59536-65-1	Polybrominated Biphenyls	-	-	-	-	-	-	-	-
1336-36-3	Polychlorinated biphenyls (A	-	-	-	-	-	-	-	-
00-08-0	Polychlorinated Dibenzo-P-	-	-	-	-	-	-	-	-
00-05-0	Polychlorinated Dibenzodio	-	-	-	-	-	-	-	-
00-05-1	Polychlorinated Dibenzofura	-	-	-	-	-	-	-	-
130498-29-2	Polycyclic Aromatic Hydroca	-	-	-	-	-	-	-	-
00-01-7	Polycyclic Organic Matter (P	-	-	-	-	-	-	-	-
9016-87-9	Polymeric diphenylmethane	-	-	-	-	-	-	-	-
7758-01-2	Potassium bromate	-	-	-	-	-	-	-	-
1120-71-4	Propane sultone, 1,3-	-	-	-	-	-	-	-	-
57-57-8	Propiolactone, beta-	-	-	-	-	-	-	-	-
123-38-6	Propionaldehyde	-	-	-	-	-	-	-	-
115-07-1	Propylene	-	-	-	-	-	-	-	-
78-87-5	Propylene dichloride (1,2-Di	-	-	-	-	-	-	-	-
107-98-2	Propylene Glycol Monometh	-	-	-	-	-	-	-	-
75-56-9	Propylene oxide	-	-	-	-	-	-	-	-
930-55-2	Pyrrolidine, 1-Nitroso-	-	-	-	-	-	-	-	-
7782-49-2	Selenium	-	-	-	-	-	-	-	-
0-01-9	Selenium Compounds	-	-	-	-	-	-	-	-
7631-86-9	Silica (crystalline, respirable	-	-	-	-	-	-	-	-
1310-73-2	Sodium hydroxide	-	-	-	-	-	-	-	-
10588-01-9	Sodium Dichromate	-	-	-	-	-	-	-	-
7789-06-2	Strontium chromate	-	-	-	-	-	-	-	-
100-42-5	Styrene	-	-	-	-	-	-	-	-
96-09-3	Styrene oxide	-	-	-	-	-	-	-	-
14808-79-8	Sulfates	-	-	-	-	-	-	-	-
126-33-0	Sulfolane	-	-	-	-	-	-	-	-
7446-09-5	Sulfur dioxide	-	-	-	-	-	-	-	-
7664-93-9	Sulfuric acid (aerosol forms	-	-	-	-	-	-	-	-
8014-95-7	Sulfuric Acid mixture w. sulf	-	-	-	-	-	-	-	-
00-09-1	TCDD Eqivalents, 2,3,7,8-	-	-	-	-	-	-	-	-
540-88-5	Tert-Butyl Acetate	-	-	-	-	-	-	-	-
1746-01-6	Tetrachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-8	Tetrachlorodibenzodioxins,	-	-	-	-	-	-	-	-
51207-31-9	Tetrachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-

00-08-6	Tetrachlorodibenzofurans, A	-	-	-	-	-	-	-	-
630-20-6	Tetrachloroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
79-34-5	Tetrachloroethane, 1,1,2,2-	-	-	-	-	-	-	-	-
127-18-4	Tetrachloroethylene (Perchl	-	-	-	-	-	-	-	-
811-97-2	Tetrafluoroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
109-99-9	Tetrahydrofuran	-	-	-	-	-	-	-	-
62-55-5	Thioacetamide	-	-	-	-	-	-	-	-
62-56-6	Thiourea	-	-	-	-	-	-	-	-
108-88-3	Toluene	-	-	-	-	-	-	-	-
584-84-9	Toluene-2,4-diisocyanate	-	-	-	-	-	-	-	-
91-08-7	Toluene-2,6-diisocyanate	-	-	-	-	-	-	-	-
95-80-7	Toluene diamine, 2,4-	-	-	-	-	-	-	-	-
26471-62-5	Toluenediisocyanate (mixed	-	-	-	-	-	-	-	-
95-53-4	Toluidine, o- (Methylaniline,	-	-	-	-	-	-	-	-
8001-35-2	Toxaphene (chlorinated ca	-	-	-	-	-	-	-	-
10061-02-6	trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-
120-82-1	Trichlorobenzene, 1,2,4-	-	-	-	-	-	-	-	-
79-00-5	Trichloroethane, 1,1,2-	-	-	-	-	-	-	-	-
79-01-6	Trichloroethylene (TCE)	-	-	-	-	-	-	-	-
75-69-4	Trichlorofluoromethane (CF	-	-	-	-	-	-	-	-
88-06-2	Trichlorophenol, 2,4,6-	-	-	-	-	-	-	-	-
96-18-4	Trichloropropane, 1,2,3-	-	-	-	-	-	-	-	-
96-19-5	Trichloropropene, 1,2,3-	-	-	-	-	-	-	-	-
76-13-1	Trichlorotrifluoroethane, 1,1	-	-	-	-	-	-	-	-
121-44-8	Triethylamine	-	-	-	-	-	-	-	-
420-46-2	Trifluoroethane, 1,1,1-	-	-	-	-	-	-	-	-
526-73-8	Trimethylbenzene, 1,2,3-	-	-	-	-	-	-	-	-
95-63-6	Trimethylbenzene, 1,2,4-	-	-	-	-	-	-	-	-
108-67-8	Trimethylbenzene, 1,3,5-	-	-	-	-	-	-	-	-
URANIUM-SO	Uranium (Soluble Salts)	-	-	-	-	-	-	-	-
7440-61-1	Uranium, Insoluble Compou	-	-	-	-	-	-	-	-
7440-62-2	Vanadium and Compounds	-	-	-	-	-	-	-	-
1314-62-1	Vanadium Pentoxide, (V2O	-	-	-	-	-	-	-	-
108-05-4	Vinyl acetate	-	-	-	-	-	-	-	-
593-60-2	Vinyl bromide	-	-	-	-	-	-	-	-
75-01-4	Vinyl chloride	-	-	-	-	-	-	-	-
1330-20-7	Xylenes	-	-	-	-	-	-	-	-
108-38-3	Xylenes, m-	-	-	-	-	-	-	-	-
95-47-6	Xylenes, o-	-	-	-	-	-	-	-	-
106-42-3	Xylenes, p-	-	-	-	-	-	-	-	-
13530-65-9	Zinc chromate	-	-	-	-	-	-	-	-

RASS version: 2020-12

No inputs needed on this page

Air Concentrations in ug/m3

		Stack #4				Stack #5			
CAS# or MPCA#	**Chemical Name**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**
202-94-8	11H-Benz[b,c]aceanthrylene	-	-	-	-	-	-	-	-
202-98-2	4H-Cyclopenta[d,e,f]chrysen	-	-	-	-	-	-	-	-
75-07-0	Acetaldehyde	-	-	-	-	-	-	-	-
60-35-5	Acetamide	-	-	-	-	-	-	-	-
67-64-1	Acetone	-	-	-	-	-	-	-	-
75-86-5	Acetone Cyanohydrin	-	-	-	-	-	-	-	-
75-05-8	Acetonitrile	-	-	-	-	-	-	-	-
53-96-3	Acetylaminofluorene, 2-	-	-	-	-	-	-	-	-
107-02-8	Acrolein	-	-	-	-	-	-	-	-
79-06-1	Acrylamide	-	-	-	-	-	-	-	-
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-	-	-	-	-	-	-	-	-
79-10-7	Acrylic acid	-	-	-	-	-	-	-	-
107-13-1	Acrylonitrile	-	-	-	-	-	-	-	-
111-69-3	Adiponitrile	-	-	-	-	-	-	-	-
ALDEHYDES	Aldehydes	-	-	-	-	-	-	-	-
309-00-2	Aldrin	-	-	-	-	-	-	-	-
ALIPHATIC-M	Aliphatic Hydrocarbon Strea	-	-	-	-	-	-	-	-
107-05-1	Allyl chloride	-	-	-	-	-	-	-	-
7429-90-5	Aluminum	-	-	-	-	-	-	-	-
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3	-	-	-	-	-	-	-	-
6109-97-3	Amino-9-ethylcarbazolehydr	-	-	-	-	-	-	-	-
117-79-3	Aminoanthraquinone, 2-	-	-	-	-	-	-	-	-
7664-41-7	Ammonia	-	-	-	-	-	-	-	-
62-53-3	Aniline	-	-	-	-	-	-	-	-
191-26-4	Anthanthrene	-	-	-	-	-	-	-	-
7440-36-0	Antimony	-	-	-	-	-	-	-	-
ANTIMONY-C	Antimony Compounds	-	-	-	-	-	-	-	-
1309-64-4	Antimony trioxide	-	-	-	-	-	-	-	-
140-57-8	Aramite	-	-	-	-	-	-	-	-
7440-38-2	Arsenic	-	-	-	-	-	-	-	-
ARSENIC-CO	Arsenic Compounds	-	-	-	-	-	-	-	-
1327-53-3	Arsenic Trioxide	-	-	-	-	-	-	-	-
7784-42-1	Arsine	-	-	-	-	-	-	-	-
1332-21-4	Asbestos (units in fibers)	-	-	-	-	-	-	-	-
1332-21-4-LA	Asbestos, Libby Amphibole	-	-	-	-	-	-	-	-
123-77-3	Azodicarbonamide	-	-	-	-	-	-	-	-
10294-40-3	Barium Chromate	-	-	-	-	-	-	-	-
199-54-2	Benz[e]aceanthrylene	-	-	-	-	-	-	-	-
202-33-5	Benz[j]aceanthrylene	-	-	-	-	-	-	-	-
211-91-6	Benz[l]aceanthrylene	-	-	-	-	-	-	-	-
71-43-2	Benzene	-	-	-	-	-	-	-	-
92-87-5	Benzidine	-	-	-	-	-	-	-	-
205-82-3	Benzo(j)fluoranthene	-	-	-	-	-	-	-	-
207-08-9	Benzo(k)fluoranthene	-	-	-	-	-	-	-	-
56-55-3	Benzo[a]anthracene	-	-	-	-	-	-	-	-
50-32-8	Benzo[a]pyrene	-	-	-	-	-	-	-	-
205-99-2	Benzo[b]fluoranthene	-	-	-	-	-	-	-	-
205-12-9	Benzo[c]fluorene	-	-	-	-	-	-	-	-
191-24-2	Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-
65-85-0	Benzoic Acid	-	-	-	-	-	-	-	-
100-44-7	Benzyl chloride	-	-	-	-	-	-	-	-
7440-41-7	Beryllium	-	-	-	-	-	-	-	-
BERYLLIUM-	Beryllium Compounds	-	-	-	-	-	-	-	-
13510-49-1	Beryllium sulfate	-	-	-	-	-	-	-	-
111-44-4	Bis(2-chloroethyl)ether	-	-	-	-	-	-	-	-
117-81-7	Bis(2-ethylhexyl)phthalate (	-	-	-	-	-	-	-	-
542-88-1	Bis(chloromethyl)ether	-	-	-	-	-	-	-	-
7440-42-8	Boron And Borates Only	-	-	-	-	-	-	-	-
10294-34-5	Boron Trichloride	-	-	-	-	-	-	-	-
7637-07-2	Boron Trifluoride	-	-	-	-	-	-	-	-
108-86-1	Bromobenzene	-	-	-	-	-	-	-	-
74-97-5	Bromochloromethane	-	-	-	-	-	-	-	-
75-27-4	Bromodichloromethane	-	-	-	-	-	-	-	-
75-25-2	Bromoform	-	-	-	-	-	-	-	-
74-83-9	Bromomethane	-	-	-	-	-	-	-	-
106-94-5	Bromopropane, 1-	-	-	-	-	-	-	-	-
106-99-0	Butadiene, 1,3-	-	-	-	-	-	-	-	-
78-92-2	Butyl alcohol, sec-	-	-	-	-	-	-	-	-
111-76-2	Butyl Cellosolve (ethylene g	-	-	-	-	-	-	-	-
25013-16-5	Butylated hydroxyanisole	-	-	-	-	-	-	-	-
3068-88-0	Butyrolactone, beta-	-	-	-	-	-	-	-	-
7440-43-9	Cadmium	-	-	-	-	-	-	-	-
CADMIUM-CO	Cadmium Compounds	-	-	-	-	-	-	-	-
13765-19-0	Calcium Chromate	-	-	-	-	-	-	-	-
105-60-2	Caprolactum	-	-	-	-	-	-	-	-
75-15-0	Carbon disulfide	-	-	-	-	-	-	-	-
630-08-0	Carbon Monoxide	-	-	-	-	-	-	-	-
56-23-5	Carbon tetrachloride	-	-	-	-	-	-	-	-
463-58-1	Carbonyl sulfide	-	-	-	-	-	-	-	-
111-15-9	Cellosolve Acetate (ethylen	-	-	-	-	-	-	-	-
1306-38-3	Cerium Oxide and Cerium C	-	-	-	-	-	-	-	-
12789-03-6	Chlordane or (57-74-9)	-	-	-	-	-	-	-	-
115-28-6	Chlorendic acid	-	-	-	-	-	-	-	-
108171-26-2	Chlorinated Paraffins (C12,	-	-	-	-	-	-	-	-
7782-50-5	Chlorine	-	-	-	-	-	-	-	-

10049-04-4	Chlorine Oxide (CLO2)	-	-	-	-	-	-	-	-
75-68-3	Chloro-1,1-difluoroethane, 1	-	-	-	-	-	-	-	-
563-47-3	Chloro-2-methylpropene, 3-	-	-	-	-	-	-	-	-
95-83-0	Chloro-o-phenylenediamine	-	-	-	-	-	-	-	-
95-69-2	Chloro-o-toluidine, p-	-	-	-	-	-	-	-	-
532-27-4	Chloroacetophenone, 2-	-	-	-	-	-	-	-	-
108-90-7	Chlorobenzene	-	-	-	-	-	-	-	-
98-56-6	Chlorobenzotrifluoride, 4-	-	-	-	-	-	-	-	-
75-45-6	Chlorodifluoromethane (HC	-	-	-	-	-	-	-	-
67-66-3	Chloroform	-	-	-	-	-	-	-	-
107-30-2	Chloromethyl Methyl Ether	-	-	-	-	-	-	-	-
88-73-3	Chloronitrobenzene, o-	-	-	-	-	-	-	-	-
100-00-5	Chloronitrobenzene, p-	-	-	-	-	-	-	-	-
76-06-2	Chloropicrin	-	-	-	-	-	-	-	-
126-99-8	Chloroprene	-	-	-	-	-	-	-	-
1333-82-0	Chromic acid mists and diss	-	-	-	-	-	-	-	-
7440-47-3	Chromium	-	-	-	-	-	-	-	-
18540-29-9	Chromium (Hexavalent)	-	-	-	-	-	-	-	-
18540-29-9-p	Chromium (Hexavalent) - P	-	-	-	-	-	-	-	-
CHROM-COM	Chromium Compounds	-	-	-	-	-	-	-	-
16065-83-1	Chromium(III) Compounds	-	-	-	-	-	-	-	-
218-01-9	Chrysene (Benzo(a)phenan	-	-	-	-	-	-	-	-
87-29-6	Cinnamyl anthranilate	-	-	-	-	-	-	-	-
10061-01-5	cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-
8007-45-2	Coal Tar	-	-	-	-	-	-	-	-
7440-48-4	Cobalt	-	-	-	-	-	-	-	-
0-00-7	Coke Oven Emissions	-	-	-	-	-	-	-	-
7440-50-8	Copper	-	-	-	-	-	-	-	-
COPPER-CO	Copper Compounds	-	-	-	-	-	-	-	-
120-71-8	Cresidine, p-	-	-	-	-	-	-	-	-
108-39-4	Cresol, m-	-	-	-	-	-	-	-	-
95-48-7	Cresol, o-	-	-	-	-	-	-	-	-
106-44-5	Cresol, p-	-	-	-	-	-	-	-	-
1319-77-3	Cresols/Cresylic acid (isome	-	-	-	-	-	-	-	-
98-82-8	Cumene	-	-	-	-	-	-	-	-
135-20-6	Cupferron	-	-	-	-	-	-	-	-
57-12-5	Cyanide (Cyanide ion, Inorg	-	-	-	-	-	-	-	-
CYANIDE-CO	Cyanide Compounds	-	-	-	-	-	-	-	-
110-82-7	Cyclohexane	-	-	-	-	-	-	-	-
108-94-1	Cyclohexanone	-	-	-	-	-	-	-	-
27208-37-3	Cyclopenta[c,d]pyrene	-	-	-	-	-	-	-	-
50-29-3	DDT	-	-	-	-	-	-	-	-
615-05-4	Diaminoanisole, 2,4-	-	-	-	-	-	-	-	-
101-80-4	Diaminodiphenyl ether, 4,4-	-	-	-	-	-	-	-	-
103-33-3	Diazene, Diphenyl	-	-	-	-	-	-	-	-
226-36-8	Dibenz(a,h)acridine	-	-	-	-	-	-	-	-
224-42-0	Dibenz(a,j)acridine	-	-	-	-	-	-	-	-
53-70-3	Dibenz[a,h]anthracene	-	-	-	-	-	-	-	-
192-65-4	Dibenzo(a,e)pyrene	-	-	-	-	-	-	-	-
189-64-0	Dibenzo(a,h)pyrene	-	-	-	-	-	-	-	-
191-30-0	Dibenzo(a,l)pyrene	-	-	-	-	-	-	-	-
194-59-2	Dibenzo(c,g)carbazole, 7H-	-	-	-	-	-	-	-	-
5385-75-1	Dibenzo[a,e]fluoranthene	-	-	-	-	-	-	-	-
189-55-9	Dibenzo[a,i]pyrene	-	-	-	-	-	-	-	-
96-12-8	Dibromo-3-chloropropane, 1	-	-	-	-	-	-	-	-
764-41-0	Dichloro-2-butene, 1,4-	-	-	-	-	-	-	-	-
1476-11-5	Dichloro-2-butene, cis-1,4-	-	-	-	-	-	-	-	-
106-46-7	Dichlorobenzene(p), 1,4-	-	-	-	-	-	-	-	-
25321-22-6	Dichlorobenzenes	-	-	-	-	-	-	-	-
91-94-1	Dichlorobenzidene, 3,3-	-	-	-	-	-	-	-	-
75-71-8	Dichlorodifluoromethane (C	-	-	-	-	-	-	-	-
75-35-4	Dichloroethylene (1,1-) (Vin	-	-	-	-	-	-	-	-
156-60-5	Dichloroethylene, trans-1,2-	-	-	-	-	-	-	-	-
542-75-6	Dichloropropene, 1,3-	-	-	-	-	-	-	-	-
78-88-6	Dichloropropene, 2,3-	-	-	-	-	-	-	-	-
62-73-7	Dichlorvos	-	-	-	-	-	-	-	-
77-73-6	Dicyclopentadiene	-	-	-	-	-	-	-	-
60-57-1	Dieldrin	-	-	-	-	-	-	-	-
0-02-4	Diesel exhaust particulate	-	-	-	-	-	-	-	-
111-42-2	Diethanolamine	-	-	-	-	-	-	-	-
112-34-5	Diethylene Glycol Monobuty	-	-	-	-	-	-	-	-
111-90-0	Diethylene Glycol Monoethy	-	-	-	-	-	-	-	-
75-37-6	Difluoroethane, 1,1-	-	-	-	-	-	-	-	-
108-20-3	Diisopropyl Ether	-	-	-	-	-	-	-	-
60-11-7	Dimethyl aminoazobenzene	-	-	-	-	-	-	-	-
68-12-2	Dimethyl formamide	-	-	-	-	-	-	-	-
108-01-0	Dimethylamino ethanol, 2-	-	-	-	-	-	-	-	-
57-97-6	Dimethylbenz[a]anthracene,	-	-	-	-	-	-	-	-
57-14-7	Dimethylhydrazine, 1,1-	-	-	-	-	-	-	-	-
42397-64-8	Dinitropyrene, 1,6- (BaP)	-	-	-	-	-	-	-	-
42397-65-9	Dinitropyrene, 1,8- (BaP)	-	-	-	-	-	-	-	-
121-14-2	Dinitrotoluene, 2,4-	-	-	-	-	-	-	-	-
123-91-1	Dioxane, 1,4- (1,4-Diethylen	-	-	-	-	-	-	-	-
122-66-7	Diphenylhydrazine, 1,2-	-	-	-	-	-	-	-	-
106-89-8	Epichlorohydrin (l-Chloro-2,	-	-	-	-	-	-	-	-
106-88-7	Epoxybutane, 1,2-	-	-	-	-	-	-	-	-
110-80-5	Ethoxyethanol, 2- (ethylene	-	-	-	-	-	-	-	-
141-78-6	Ethyl acetate	-	-	-	-	-	-	-	-
140-88-5	Ethyl Acrylate	-	-	-	-	-	-	-	-
100-41-4	Ethyl benzene	-	-	-	-	-	-	-	-
51-79-6	Ethyl carbamate (Urethane)	-	-	-	-	-	-	-	-

75-00-3	Ethyl chloride (Chloroethane	-	-	-	-	-	-	-	-
97-63-2	Ethyl Methacrylate	-	-	-	-	-	-	-	-
106-93-4	Ethylene dibromide (Dibrom	-	-	-	-	-	-	-	-
107-06-2	Ethylene dichloride (1,2-Dic	-	-	-	-	-	-	-	-
107-21-1	Ethylene glycol	-	-	-	-	-	-	-	-
75-21-8	Ethylene oxide	-	-	-	-	-	-	-	-
96-45-7	Ethylene thiourea	-	-	-	-	-	-	-	-
75-34-3	Ethylidene dichloride (1,1-D	-	-	-	-	-	-	-	-
206-44-0	Fluoranthene	-	-	-	-	-	-	-	-
FLUORIDES	Fluorides (except hydrogen	-	-	-	-	-	-	-	-
50-00-0	Formaldehyde	-	-	-	-	-	-	-	-
64-18-6	Formic Acid	-	-	-	-	-	-	-	-
111-30-8	Glutaraldehyde	-	-	-	-	-	-	-	-
0-01-2	Glycol ethers	-	-	-	-	-	-	-	-
76-44-8	Heptachlor	-	-	-	-	-	-	-	-
1024-57-3	Heptachlor epoxide	-	-	-	-	-	-	-	-
35822-46-9	Heptachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-5	Heptachlorodibenzodioxin,	-	-	-	-	-	-	-	-
67562-39-4	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
55673-89-7	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
00-08-4	Heptachlorodibenzofuran, A	-	-	-	-	-	-	-	-
142-82-5	Heptane, N	-	-	-	-	-	-	-	-
118-74-1	Hexachlorobenzene	-	-	-	-	-	-	-	-
87-68-3	Hexachlorobutadiene	-	-	-	-	-	-	-	-
608-73-1	Hexachlorocyclohexane (tec	-	-	-	-	-	-	-	-
319-84-6	Hexachlorocyclohexane, alp	-	-	-	-	-	-	-	-
319-85-7	Hexachlorocyclohexane, be	-	-	-	-	-	-	-	-
77-47-4	Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-
39227-28-6	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
57653-85-7	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
19408-74-3	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-3	Hexachlorodibenzodioxins,	-	-	-	-	-	-	-	-
70648-26-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
57117-44-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
72918-21-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
60851-34-5	Hexachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-
00-08-2	Hexachlorodibenzofurans, A	-	-	-	-	-	-	-	-
67-72-1	Hexachloroethane	-	-	-	-	-	-	-	-
822-06-0	Hexamethylene-1,6-diisocya	-	-	-	-	-	-	-	-
110-54-3	Hexane	-	-	-	-	-	-	-	-
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl	-	-	-	-	-	-	-	-
591-78-6	Hexanone-2	-	-	-	-	-	-	-	-
302-01-2	Hydrazine	-	-	-	-	-	-	-	-
10034-93-2	Hydrazine sulfate	-	-	-	-	-	-	-	-
7647-01-0	Hydrochloric acid (hydrogen	-	-	-	-	-	-	-	-
74-90-8	Hydrogen cyanide	-	-	-	-	-	-	-	-
7664-39-3	Hydrogen fluoride (Hydroflu	-	-	-	-	-	-	-	-
7783-07-5	Hydrogen selenide	-	-	-	-	-	-	-	-
7783-06-4	Hydrogen sulfide	-	-	-	-	-	-	-	-
193-39-5	Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-
5888-33-5	Isobornyl acrylate	-	-	-	-	-	-	-	-
78-59-1	Isophorone	-	-	-	-	-	-	-	-
67-63-0	Isopropyl alcohol	-	-	-	-	-	-	-	-
7439-92-1	Lead	-	-	-	-	-	-	-	-
7758-97-6	Lead Chromate	-	-	-	-	-	-	-	-
LEAD-COMP	Lead Compounds	-	-	-	-	-	-	-	-
58-89-9	Lindane (all isomers)	-	-	-	-	-	-	-	-
108-31-6	Maleic anhydride	-	-	-	-	-	-	-	-
7439-96-5	Manganese	-	-	-	-	-	-	-	-
MANGANESE	Manganese Compounds	-	-	-	-	-	-	-	-
7439-97-6	Mercury (elemental)	-	-	-	-	-	-	-	-
MERCURY-C	Mercury Compounds	-	-	-	-	-	-	-	-
126-98-7	Methacrylonitrile	-	-	-	-	-	-	-	-
67-56-1	Methanol	-	-	-	-	-	-	-	-
109-86-4	Methoxyethanol, 2- (ethylen	-	-	-	-	-	-	-	-
96-33-3	Methyl acrylate	-	-	-	-	-	-	-	-
110-49-6	Methyl Cellosolve Acetate	-	-	-	-	-	-	-	-
74-87-3	Methyl chloride (Chlorometh	-	-	-	-	-	-	-	-
71-55-6	Methyl chloroform (1,1,1-Tri	-	-	-	-	-	-	-	-
78-93-3	Methyl ethyl ketone (2-Buta	-	-	-	-	-	-	-	-
60-34-4	Methyl Hydrazine	-	-	-	-	-	-	-	-
108-10-1	Methyl isobutyl ketone (Hex	-	-	-	-	-	-	-	-
624-83-9	Methyl isocyanate	-	-	-	-	-	-	-	-
80-62-6	Methyl methacrylate	-	-	-	-	-	-	-	-
1634-04-4	Methyl tert butyl ether	-	-	-	-	-	-	-	-
56-49-5	Methylcholanthrene, 3-	-	-	-	-	-	-	-	-
3697-24-3	Methylchrysene, 5-	-	-	-	-	-	-	-	-
101-14-4	Methylene bis(2-chloroanilin	-	-	-	-	-	-	-	-
74-95-3	Methylene Bromide	-	-	-	-	-	-	-	-
75-09-2	Methylene chloride (Dichlor	-	-	-	-	-	-	-	-
101-68-8	Methylene diphenyl diisocya	-	-	-	-	-	-	-	-
101-77-9	Methylenedianiline, 4,4-	-	-	-	-	-	-	-	-
90-94-8	Michler's ketone	-	-	-	-	-	-	-	-
10595-95-6	N- Nitrosomethylethylamine	-	-	-	-	-	-	-	-
924-16-3	N-Nitrosodi-n-butylamine	-	-	-	-	-	-	-	-
621-64-7	N-Nitrosodi-n-propylamine	-	-	-	-	-	-	-	-
55-18-5	N-Nitrosodiethylamine	-	-	-	-	-	-	-	-
62-75-9	N-Nitrosodimethylamine	-	-	-	-	-	-	-	-
86-30-6	N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-
59-89-2	N-Nitrosomorpholine	-	-	-	-	-	-	-	-
100-75-4	N-Nitrosopiperidine	-	-	-	-	-	-	-	-

111-84-2	N-Nonane	-	-	-	-	-	-	-	-
64724-95-6	Naphtha, High Flash Aroma	-	-	-	-	-	-	-	-
91-20-3	Naphthalene	-	-	-	-	-	-	-	-
193-09-9	Naphtho[2,3-e]pyrene	-	-	-	-	-	-	-	-
7440-02-0	Nickel	-	-	-	-	-	-	-	-
NICKEL-COM	Nickel Compounds	-	-	-	-	-	-	-	-
1313-99-1	Nickel oxide	-	-	-	-	-	-	-	-
0-02-5	Nickel refinery dust from the	-	-	-	-	-	-	-	-
12035-72-2	Nickel sulfide (NI3S2)	-	-	-	-	-	-	-	-
7697-37-2	Nitric acid	-	-	-	-	-	-	-	-
139-13-9	Nitrilotriacetic acid	-	-	-	-	-	-	-	-
18662-53-8	Nitrilotriacetic acid, trisodiu	-	-	-	-	-	-	-	-
602-87-9	Nitroacenaphthene, 5-	-	-	-	-	-	-	-	-
88-74-4	Nitroaniline, 2-	-	-	-	-	-	-	-	-
100-01-6	Nitroaniline, 4-	-	-	-	-	-	-	-	-
98-95-3	Nitrobenzene	-	-	-	-	-	-	-	-
7496-02-8	Nitrochrysene, 6-	-	-	-	-	-	-	-	-
607-57-8	Nitrofluorene, 2-	-	-	-	-	-	-	-	-
10102-44-0	Nitrogen dioxide (NO2)	-	-	-	-	-	-	-	-
75-52-5	Nitromethane	-	-	-	-	-	-	-	-
79-46-9	Nitropropane, 2-	-	-	-	-	-	-	-	-
5522-43-0	Nitropyrene, 1-	-	-	-	-	-	-	-	-
57835-92-4	Nitropyrene, 4-	-	-	-	-	-	-	-	-
156-10-5	Nitrosodiphenylamine, p-	-	-	-	-	-	-	-	-
3268-87-9	Octachlorodibenzo-p-dioxin,	-	-	-	-	-	-	-	-
39001-02-0	Octachlorodibenzofuran, 1,2	-	-	-	-	-	-	-	-
10028-15-6	Ozone	-	-	-	-	-	-	-	-
74472-37-0	PCB 114 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
31508-00-6	PCB 118 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
65510-44-3	PCB 123 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
57465-28-8	PCB 126 (3,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
38380-0804	PCB 156 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Hep	-	-	-	-	-	-	-	-
32598-13-3	PCB 77 (3,3,4,4-Tetrachloro	-	-	-	-	-	-	-	-
70362-50-4	PCB 81 (3,4,4,5 Tetrachloro	-	-	-	-	-	-	-	-
32598-14-4	PCB105 (2,3,3,4,4 Pentachl	-	-	-	-	-	-	-	-
40321-76-4	Pentachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-1	Pentachlorodibenzodioxins,	-	-	-	-	-	-	-	-
57117-41-6	Pentachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
57117-31-4	Pentachlorodibenzofuran, 2	-	-	-	-	-	-	-	-
00-09-0	Pentachlorodibenzofurans,	-	-	-	-	-	-	-	-
87-86-5	Pentachlorophenol	-	-	-	-	-	-	-	-
109-66-0	Pentane, n-	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
85-01-8	Phenanthrene	-	-	-	-	-	-	-	-
108-95-2	Phenol	-	-	-	-	-	-	-	-
75-44-5	Phosgene	-	-	-	-	-	-	-	-
7803-51-2	Phosphine	-	-	-	-	-	-	-	-
7664-38-2	Phosphoric acid	-	-	-	-	-	-	-	-
85-44-9	Phthalic anhydride	-	-	-	-	-	-	-	-
59536-65-1	Polybrominated Biphenyls	-	-	-	-	-	-	-	-
1336-36-3	Polychlorinated biphenyls (A	-	-	-	-	-	-	-	-
00-08-0	Polychlorinated Dibenzo-P-	-	-	-	-	-	-	-	-
00-05-0	Polychlorinated Dibenzodio	-	-	-	-	-	-	-	-
00-05-1	Polychlorinated Dibenzofura	-	-	-	-	-	-	-	-
130498-29-2	Polycyclic Aromatic Hydroca	-	-	-	-	-	-	-	-
00-01-7	Polycyclic Organic Matter (P	-	-	-	-	-	-	-	-
9016-87-9	Polymeric diphenylmethane	-	-	-	-	-	-	-	-
7758-01-2	Potassium bromate	-	-	-	-	-	-	-	-
1120-71-4	Propane sultone, 1,3-	-	-	-	-	-	-	-	-
57-57-8	Propiolactone, beta-	-	-	-	-	-	-	-	-
123-38-6	Propionaldehyde	-	-	-	-	-	-	-	-
115-07-1	Propylene	-	-	-	-	-	-	-	-
78-87-5	Propylene dichloride (1,2-Di	-	-	-	-	-	-	-	-
107-98-2	Propylene Glycol Monometh	-	-	-	-	-	-	-	-
75-56-9	Propylene oxide	-	-	-	-	-	-	-	-
930-55-2	Pyrrolidine, 1-Nitroso-	-	-	-	-	-	-	-	-
7782-49-2	Selenium	-	-	-	-	-	-	-	-
0-01-9	Selenium Compounds	-	-	-	-	-	-	-	-
7631-86-9	Silica (crystalline, respirable	-	-	-	-	-	-	-	-
1310-73-2	Sodium hydroxide	-	-	-	-	-	-	-	-
10588-01-9	Sodium Dichromate	-	-	-	-	-	-	-	-
7789-06-2	Strontium chromate	-	-	-	-	-	-	-	-
100-42-5	Styrene	-	-	-	-	-	-	-	-
96-09-3	Styrene oxide	-	-	-	-	-	-	-	-
14808-79-8	Sulfates	-	-	-	-	-	-	-	-
126-33-0	Sulfolane	-	-	-	-	-	-	-	-
7446-09-5	Sulfur dioxide	-	-	-	-	-	-	-	-
7664-93-9	Sulfuric acid (aerosol forms	-	-	-	-	-	-	-	-
8014-95-7	Sulfuric Acid mixture w. sulf	-	-	-	-	-	-	-	-
00-09-1	TCDD Eqivalents, 2,3,7,8-	-	-	-	-	-	-	-	-
540-88-5	Tert-Butyl Acetate	-	-	-	-	-	-	-	-
1746-01-6	Tetrachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-8	Tetrachlorodibenzodioxins,	-	-	-	-	-	-	-	-
51207-31-9	Tetrachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-

00-08-6	Tetrachlorodibenzofurans, A	-	-	-	-	-	-	-	-
630-20-6	Tetrachloroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
79-34-5	Tetrachloroethane, 1,1,2,2-	-	-	-	-	-	-	-	-
127-18-4	Tetrachloroethylene (Perchl	-	-	-	-	-	-	-	-
811-97-2	Tetrafluoroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
109-99-9	Tetrahydrofuran	-	-	-	-	-	-	-	-
62-55-5	Thioacetamide	-	-	-	-	-	-	-	-
62-56-6	Thiourea	-	-	-	-	-	-	-	-
108-88-3	Toluene	-	-	-	-	-	-	-	-
584-84-9	Toluene-2,4-diisocyanate	-	-	-	-	-	-	-	-
91-08-7	Toluene-2,6-diisocyanate	-	-	-	-	-	-	-	-
95-80-7	Toluene diamine, 2,4-	-	-	-	-	-	-	-	-
26471-62-5	Toluenediisocyanate (mixed	-	-	-	-	-	-	-	-
95-53-4	Toluidine, o- (Methylaniline,	-	-	-	-	-	-	-	-
8001-35-2	Toxaphene (chlorinated ca	-	-	-	-	-	-	-	-
10061-02-6	trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-
120-82-1	Trichlorobenzene, 1,2,4-	-	-	-	-	-	-	-	-
79-00-5	Trichloroethane, 1,1,2-	-	-	-	-	-	-	-	-
79-01-6	Trichloroethylene (TCE)	-	-	-	-	-	-	-	-
75-69-4	Trichlorofluoromethane (CF	-	-	-	-	-	-	-	-
88-06-2	Trichlorophenol, 2,4,6-	-	-	-	-	-	-	-	-
96-18-4	Trichloropropane, 1,2,3-	-	-	-	-	-	-	-	-
96-19-5	Trichloropropene, 1,2,3-	-	-	-	-	-	-	-	-
76-13-1	Trichlorotrifluoroethane, 1,1	-	-	-	-	-	-	-	-
121-44-8	Triethylamine	-	-	-	-	-	-	-	-
420-46-2	Trifluoroethane, 1,1,1-	-	-	-	-	-	-	-	-
526-73-8	Trimethylbenzene, 1,2,3-	-	-	-	-	-	-	-	-
95-63-6	Trimethylbenzene, 1,2,4-	-	-	-	-	-	-	-	-
108-67-8	Trimethylbenzene, 1,3,5-	-	-	-	-	-	-	-	-
URANIUM-SO	Uranium (Soluble Salts)	-	-	-	-	-	-	-	-
7440-61-1	Uranium, Insoluble Compou	-	-	-	-	-	-	-	-
7440-62-2	Vanadium and Compounds	-	-	-	-	-	-	-	-
1314-62-1	Vanadium Pentoxide, (V2O	-	-	-	-	-	-	-	-
108-05-4	Vinyl acetate	-	-	-	-	-	-	-	-
593-60-2	Vinyl bromide	-	-	-	-	-	-	-	-
75-01-4	Vinyl chloride	-	-	-	-	-	-	-	-
1330-20-7	Xylenes	-	-	-	-	-	-	-	-
108-38-3	Xylenes, m-	-	-	-	-	-	-	-	-
95-47-6	Xylenes, o-	-	-	-	-	-	-	-	-
106-42-3	Xylenes, p-	-	-	-	-	-	-	-	-
13530-65-9	Zinc chromate	-	-	-	-	-	-	-	-

RASS version: 2020-12

No inputs needed on this page

Air Concentrations in ug/m3

		Stack #6				Stack #7			
CAS# or MPCA#	**Chemical Name**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**
202-94-8	11H-Benz[b,c]aceanthrylene	-	-	-	-	-	-	-	-
202-98-2	4H-Cyclopenta[d,e,f]chrysen	-	-	-	-	-	-	-	-
75-07-0	Acetaldehyde	-	-	-	-	-	-	-	-
60-35-5	Acetamide	-	-	-	-	-	-	-	-
67-64-1	Acetone	-	-	-	-	-	-	-	-
75-86-5	Acetone Cyanohydrin	-	-	-	-	-	-	-	-
75-05-8	Acetonitrile	-	-	-	-	-	-	-	-
53-96-3	Acetylaminofluorene, 2-	-	-	-	-	-	-	-	-
107-02-8	Acrolein	-	-	-	-	-	-	-	-
79-06-1	Acrylamide	-	-	-	-	-	-	-	-
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-	-	-	-	-	-	-	-	-
79-10-7	Acrylic acid	-	-	-	-	-	-	-	-
107-13-1	Acrylonitrile	-	-	-	-	-	-	-	-
111-69-3	Adiponitrile	-	-	-	-	-	-	-	-
ALDEHYDES	Aldehydes	-	-	-	-	-	-	-	-
309-00-2	Aldrin	-	-	-	-	-	-	-	-
ALIPHATIC-M	Aliphatic Hydrocarbon Strea	-	-	-	-	-	-	-	-
107-05-1	Allyl chloride	-	-	-	-	-	-	-	-
7429-90-5	Aluminum	-	-	-	-	-	-	-	-
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3	-	-	-	-	-	-	-	-
6109-97-3	Amino-9-ethylcarbazolehydr	-	-	-	-	-	-	-	-
117-79-3	Aminoanthraquinone, 2-	-	-	-	-	-	-	-	-
7664-41-7	Ammonia	-	-	-	-	-	-	-	-
62-53-3	Aniline	-	-	-	-	-	-	-	-
191-26-4	Anthanthrene	-	-	-	-	-	-	-	-
7440-36-0	Antimony	-	-	-	-	-	-	-	-
ANTIMONY-C	Antimony Compounds	-	-	-	-	-	-	-	-
1309-64-4	Antimony trioxide	-	-	-	-	-	-	-	-
140-57-8	Aramite	-	-	-	-	-	-	-	-
7440-38-2	Arsenic	-	-	-	-	-	-	-	-
ARSENIC-CO	Arsenic Compounds	-	-	-	-	-	-	-	-
1327-53-3	Arsenic Trioxide	-	-	-	-	-	-	-	-
7784-42-1	Arsine	-	-	-	-	-	-	-	-
1332-21-4	Asbestos (units in fibers)	-	-	-	-	-	-	-	-
1332-21-4-LA	Asbestos, Libby Amphibole	-	-	-	-	-	-	-	-
123-77-3	Azodicarbonamide	-	-	-	-	-	-	-	-
10294-40-3	Barium Chromate	-	-	-	-	-	-	-	-
199-54-2	Benz[e]aceanthrylene	-	-	-	-	-	-	-	-
202-33-5	Benz[j]aceanthrylene	-	-	-	-	-	-	-	-
211-91-6	Benz[l]aceanthrylene	-	-	-	-	-	-	-	-
71-43-2	Benzene	-	-	-	-	-	-	-	-
92-87-5	Benzidine	-	-	-	-	-	-	-	-
205-82-3	Benzo(j)fluoranthene	-	-	-	-	-	-	-	-
207-08-9	Benzo(k)fluoranthene	-	-	-	-	-	-	-	-
56-55-3	Benzo[a]anthracene	-	-	-	-	-	-	-	-
50-32-8	Benzo[a]pyrene	-	-	-	-	-	-	-	-
205-99-2	Benzo[b]fluoranthene	-	-	-	-	-	-	-	-
205-12-9	Benzo[c]fluorene	-	-	-	-	-	-	-	-
191-24-2	Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-
65-85-0	Benzoic Acid	-	-	-	-	-	-	-	-
100-44-7	Benzyl chloride	-	-	-	-	-	-	-	-
7440-41-7	Beryllium	-	-	-	-	-	-	-	-
BERYLLIUM-	Beryllium Compounds	-	-	-	-	-	-	-	-
13510-49-1	Beryllium sulfate	-	-	-	-	-	-	-	-
111-44-4	Bis(2-chloroethyl)ether	-	-	-	-	-	-	-	-
117-81-7	Bis(2-ethylhexyl)phthalate (	-	-	-	-	-	-	-	-
542-88-1	Bis(chloromethyl)ether	-	-	-	-	-	-	-	-
7440-42-8	Boron And Borates Only	-	-	-	-	-	-	-	-
10294-34-5	Boron Trichloride	-	-	-	-	-	-	-	-
7637-07-2	Boron Trifluoride	-	-	-	-	-	-	-	-
108-86-1	Bromobenzene	-	-	-	-	-	-	-	-
74-97-5	Bromochloromethane	-	-	-	-	-	-	-	-
75-27-4	Bromodichloromethane	-	-	-	-	-	-	-	-
75-25-2	Bromoform	-	-	-	-	-	-	-	-
74-83-9	Bromomethane	-	-	-	-	-	-	-	-
106-94-5	Bromopropane, 1-	-	-	-	-	-	-	-	-
106-99-0	Butadiene, 1,3-	-	-	-	-	-	-	-	-
78-92-2	Butyl alcohol, sec-	-	-	-	-	-	-	-	-
111-76-2	Butyl Cellosolve (ethylene g	-	-	-	-	-	-	-	-
25013-16-5	Butylated hydroxyanisole	-	-	-	-	-	-	-	-
3068-88-0	Butyrolactone, beta-	-	-	-	-	-	-	-	-
7440-43-9	Cadmium	-	-	-	-	-	-	-	-
CADMIUM-CO	Cadmium Compounds	-	-	-	-	-	-	-	-
13765-19-0	Calcium Chromate	-	-	-	-	-	-	-	-
105-60-2	Caprolactum	-	-	-	-	-	-	-	-
75-15-0	Carbon disulfide	-	-	-	-	-	-	-	-
630-08-0	Carbon Monoxide	-	-	-	-	-	-	-	-
56-23-5	Carbon tetrachloride	-	-	-	-	-	-	-	-
463-58-1	Carbonyl sulfide	-	-	-	-	-	-	-	-
111-15-9	Cellosolve Acetate (ethylen	-	-	-	-	-	-	-	-
1306-38-3	Cerium Oxide and Cerium C	-	-	-	-	-	-	-	-
12789-03-6	Chlordane or (57-74-9)	-	-	-	-	-	-	-	-
115-28-6	Chlorendic acid	-	-	-	-	-	-	-	-
108171-26-2	Chlorinated Paraffins (C12,	-	-	-	-	-	-	-	-
7782-50-5	Chlorine	-	-	-	-	-	-	-	-

10049-04-4	Chlorine Oxide (CLO2)	-	-	-	-	-	-	-	-
75-68-3	Chloro-1,1-difluoroethane, 1	-	-	-	-	-	-	-	-
563-47-3	Chloro-2-methylpropene, 3-	-	-	-	-	-	-	-	-
95-83-0	Chloro-o-phenylenediamine	-	-	-	-	-	-	-	-
95-69-2	Chloro-o-toluidine, p-	-	-	-	-	-	-	-	-
532-27-4	Chloroacetophenone, 2-	-	-	-	-	-	-	-	-
108-90-7	Chlorobenzene	-	-	-	-	-	-	-	-
98-56-6	Chlorobenzotrifluoride, 4-	-	-	-	-	-	-	-	-
75-45-6	Chlorodifluoromethane (HC	-	-	-	-	-	-	-	-
67-66-3	Chloroform	-	-	-	-	-	-	-	-
107-30-2	Chloromethyl Methyl Ether	-	-	-	-	-	-	-	-
88-73-3	Chloronitrobenzene, o-	-	-	-	-	-	-	-	-
100-00-5	Chloronitrobenzene, p-	-	-	-	-	-	-	-	-
76-06-2	Chloropicrin	-	-	-	-	-	-	-	-
126-99-8	Chloroprene	-	-	-	-	-	-	-	-
1333-82-0	Chromic acid mists and diss	-	-	-	-	-	-	-	-
7440-47-3	Chromium	-	-	-	-	-	-	-	-
18540-29-9	Chromium (Hexavalent)	-	-	-	-	-	-	-	-
18540-29-9-p	Chromium (Hexavalent) - P	-	-	-	-	-	-	-	-
CHROM-COM	Chromium Compounds	-	-	-	-	-	-	-	-
16065-83-1	Chromium(III) Compounds	-	-	-	-	-	-	-	-
218-01-9	Chrysene (Benzo(a)phenan	-	-	-	-	-	-	-	-
87-29-6	Cinnamyl anthranilate	-	-	-	-	-	-	-	-
10061-01-5	cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-
8007-45-2	Coal Tar	-	-	-	-	-	-	-	-
7440-48-4	Cobalt	-	-	-	-	-	-	-	-
0-00-7	Coke Oven Emissions	-	-	-	-	-	-	-	-
7440-50-8	Copper	-	-	-	-	-	-	-	-
COPPER-CO	Copper Compounds	-	-	-	-	-	-	-	-
120-71-8	Cresidine, p-	-	-	-	-	-	-	-	-
108-39-4	Cresol, m-	-	-	-	-	-	-	-	-
95-48-7	Cresol, o-	-	-	-	-	-	-	-	-
106-44-5	Cresol, p-	-	-	-	-	-	-	-	-
1319-77-3	Cresols/Cresylic acid (isome	-	-	-	-	-	-	-	-
98-82-8	Cumene	-	-	-	-	-	-	-	-
135-20-6	Cupferron	-	-	-	-	-	-	-	-
57-12-5	Cyanide (Cyanide ion, Inorg	-	-	-	-	-	-	-	-
CYANIDE-CO	Cyanide Compounds	-	-	-	-	-	-	-	-
110-82-7	Cyclohexane	-	-	-	-	-	-	-	-
108-94-1	Cyclohexanone	-	-	-	-	-	-	-	-
27208-37-3	Cyclopenta[c,d]pyrene	-	-	-	-	-	-	-	-
50-29-3	DDT	-	-	-	-	-	-	-	-
615-05-4	Diaminoanisole, 2,4-	-	-	-	-	-	-	-	-
101-80-4	Diaminodiphenyl ether, 4,4-	-	-	-	-	-	-	-	-
103-33-3	Diazene, Diphenyl	-	-	-	-	-	-	-	-
226-36-8	Dibenz(a,h)acridine	-	-	-	-	-	-	-	-
224-42-0	Dibenz(a,j)acridine	-	-	-	-	-	-	-	-
53-70-3	Dibenz[a,h]anthracene	-	-	-	-	-	-	-	-
192-65-4	Dibenzo(a,e)pyrene	-	-	-	-	-	-	-	-
189-64-0	Dibenzo(a,h)pyrene	-	-	-	-	-	-	-	-
191-30-0	Dibenzo(a,l)pyrene	-	-	-	-	-	-	-	-
194-59-2	Dibenzo(c,g)carbazole, 7H-	-	-	-	-	-	-	-	-
5385-75-1	Dibenzo[a,e]fluoranthene	-	-	-	-	-	-	-	-
189-55-9	Dibenzo[a,i]pyrene	-	-	-	-	-	-	-	-
96-12-8	Dibromo-3-chloropropane, 1	-	-	-	-	-	-	-	-
764-41-0	Dichloro-2-butene, 1,4-	-	-	-	-	-	-	-	-
1476-11-5	Dichloro-2-butene, cis-1,4-	-	-	-	-	-	-	-	-
106-46-7	Dichlorobenzene(p), 1,4-	-	-	-	-	-	-	-	-
25321-22-6	Dichlorobenzenes	-	-	-	-	-	-	-	-
91-94-1	Dichlorobenzidene, 3,3-	-	-	-	-	-	-	-	-
75-71-8	Dichlorodifluoromethane (C	-	-	-	-	-	-	-	-
75-35-4	Dichloroethylene (1,1-) (Vin	-	-	-	-	-	-	-	-
156-60-5	Dichloroethylene, trans-1,2-	-	-	-	-	-	-	-	-
542-75-6	Dichloropropene, 1,3-	-	-	-	-	-	-	-	-
78-88-6	Dichloropropene, 2,3-	-	-	-	-	-	-	-	-
62-73-7	Dichlorvos	-	-	-	-	-	-	-	-
77-73-6	Dicyclopentadiene	-	-	-	-	-	-	-	-
60-57-1	Dieldrin	-	-	-	-	-	-	-	-
0-02-4	Diesel exhaust particulate	-	-	-	-	-	-	-	-
111-42-2	Diethanolamine	-	-	-	-	-	-	-	-
112-34-5	Diethylene Glycol Monobuty	-	-	-	-	-	-	-	-
111-90-0	Diethylene Glycol Monoethy	-	-	-	-	-	-	-	-
75-37-6	Difluoroethane, 1,1-	-	-	-	-	-	-	-	-
108-20-3	Diisopropyl Ether	-	-	-	-	-	-	-	-
60-11-7	Dimethyl aminoazobenzene	-	-	-	-	-	-	-	-
68-12-2	Dimethyl formamide	-	-	-	-	-	-	-	-
108-01-0	Dimethylamino ethanol, 2-	-	-	-	-	-	-	-	-
57-97-6	Dimethylbenz[a]anthracene,	-	-	-	-	-	-	-	-
57-14-7	Dimethylhydrazine, 1,1-	-	-	-	-	-	-	-	-
42397-64-8	Dinitropyrene, 1,6- (BaP)	-	-	-	-	-	-	-	-
42397-65-9	Dinitropyrene, 1,8- (BaP)	-	-	-	-	-	-	-	-
121-14-2	Dinitrotoluene, 2,4-	-	-	-	-	-	-	-	-
123-91-1	Dioxane, 1,4- (1,4-Diethylen	-	-	-	-	-	-	-	-
122-66-7	Diphenylhydrazine, 1,2-	-	-	-	-	-	-	-	-
106-89-8	Epichlorohydrin (l-Chloro-2,	-	-	-	-	-	-	-	-
106-88-7	Epoxybutane, 1,2-	-	-	-	-	-	-	-	-
110-80-5	Ethoxyethanol, 2- (ethylene	-	-	-	-	-	-	-	-
141-78-6	Ethyl acetate	-	-	-	-	-	-	-	-
140-88-5	Ethyl Acrylate	-	-	-	-	-	-	-	-
100-41-4	Ethyl benzene	-	-	-	-	-	-	-	-
51-79-6	Ethyl carbamate (Urethane)	-	-	-	-	-	-	-	-

75-00-3	Ethyl chloride (Chloroethane	-	-	-	-	-	-	-	-
97-63-2	Ethyl Methacrylate	-	-	-	-	-	-	-	-
106-93-4	Ethylene dibromide (Dibrom	-	-	-	-	-	-	-	-
107-06-2	Ethylene dichloride (1,2-Dic	-	-	-	-	-	-	-	-
107-21-1	Ethylene glycol	-	-	-	-	-	-	-	-
75-21-8	Ethylene oxide	-	-	-	-	-	-	-	-
96-45-7	Ethylene thiourea	-	-	-	-	-	-	-	-
75-34-3	Ethylidene dichloride (1,1-D	-	-	-	-	-	-	-	-
206-44-0	Fluoranthene	-	-	-	-	-	-	-	-
FLUORIDES	Fluorides (except hydrogen	-	-	-	-	-	-	-	-
50-00-0	Formaldehyde	-	-	-	-	-	-	-	-
64-18-6	Formic Acid	-	-	-	-	-	-	-	-
111-30-8	Glutaraldehyde	-	-	-	-	-	-	-	-
0-01-2	Glycol ethers	-	-	-	-	-	-	-	-
76-44-8	Heptachlor	-	-	-	-	-	-	-	-
1024-57-3	Heptachlor epoxide	-	-	-	-	-	-	-	-
35822-46-9	Heptachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-5	Heptachlorodibenzodioxin,	-	-	-	-	-	-	-	-
67562-39-4	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
55673-89-7	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
00-08-4	Heptachlorodibenzofuran, A	-	-	-	-	-	-	-	-
142-82-5	Heptane, N	-	-	-	-	-	-	-	-
118-74-1	Hexachlorobenzene	-	-	-	-	-	-	-	-
87-68-3	Hexachlorobutadiene	-	-	-	-	-	-	-	-
608-73-1	Hexachlorocyclohexane (tec	-	-	-	-	-	-	-	-
319-84-6	Hexachlorocyclohexane, alp	-	-	-	-	-	-	-	-
319-85-7	Hexachlorocyclohexane, be	-	-	-	-	-	-	-	-
77-47-4	Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-
39227-28-6	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
57653-85-7	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
19408-74-3	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-3	Hexachlorodibenzodioxins,	-	-	-	-	-	-	-	-
70648-26-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
57117-44-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
72918-21-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
60851-34-5	Hexachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-
00-08-2	Hexachlorodibenzofurans, A	-	-	-	-	-	-	-	-
67-72-1	Hexachloroethane	-	-	-	-	-	-	-	-
822-06-0	Hexamethylene-1,6-diisocya	-	-	-	-	-	-	-	-
110-54-3	Hexane	-	-	-	-	-	-	-	-
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl	-	-	-	-	-	-	-	-
591-78-6	Hexanone-2	-	-	-	-	-	-	-	-
302-01-2	Hydrazine	-	-	-	-	-	-	-	-
10034-93-2	Hydrazine sulfate	-	-	-	-	-	-	-	-
7647-01-0	Hydrochloric acid (hydrogen	-	-	-	-	-	-	-	-
74-90-8	Hydrogen cyanide	-	-	-	-	-	-	-	-
7664-39-3	Hydrogen fluoride (Hydroflu	-	-	-	-	-	-	-	-
7783-07-5	Hydrogen selenide	-	-	-	-	-	-	-	-
7783-06-4	Hydrogen sulfide	-	-	-	-	-	-	-	-
193-39-5	Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-
5888-33-5	Isobornyl acrylate	-	-	-	-	-	-	-	-
78-59-1	Isophorone	-	-	-	-	-	-	-	-
67-63-0	Isopropyl alcohol	-	-	-	-	-	-	-	-
7439-92-1	Lead	-	-	-	-	-	-	-	-
7758-97-6	Lead Chromate	-	-	-	-	-	-	-	-
LEAD-COMP	Lead Compounds	-	-	-	-	-	-	-	-
58-89-9	Lindane (all isomers)	-	-	-	-	-	-	-	-
108-31-6	Maleic anhydride	-	-	-	-	-	-	-	-
7439-96-5	Manganese	-	-	-	-	-	-	-	-
MANGANESE	Manganese Compounds	-	-	-	-	-	-	-	-
7439-97-6	Mercury (elemental)	-	-	-	-	-	-	-	-
MERCURY-C	Mercury Compounds	-	-	-	-	-	-	-	-
126-98-7	Methacrylonitrile	-	-	-	-	-	-	-	-
67-56-1	Methanol	-	-	-	-	-	-	-	-
109-86-4	Methoxyethanol, 2- (ethylen	-	-	-	-	-	-	-	-
96-33-3	Methyl acrylate	-	-	-	-	-	-	-	-
110-49-6	Methyl Cellosolve Acetate	-	-	-	-	-	-	-	-
74-87-3	Methyl chloride (Chlorometh	-	-	-	-	-	-	-	-
71-55-6	Methyl chloroform (1,1,1-Tri	-	-	-	-	-	-	-	-
78-93-3	Methyl ethyl ketone (2-Buta	-	-	-	-	-	-	-	-
60-34-4	Methyl Hydrazine	-	-	-	-	-	-	-	-
108-10-1	Methyl isobutyl ketone (Hex	-	-	-	-	-	-	-	-
624-83-9	Methyl isocyanate	-	-	-	-	-	-	-	-
80-62-6	Methyl methacrylate	-	-	-	-	-	-	-	-
1634-04-4	Methyl tert butyl ether	-	-	-	-	-	-	-	-
56-49-5	Methylcholanthrene, 3-	-	-	-	-	-	-	-	-
3697-24-3	Methylchrysene, 5-	-	-	-	-	-	-	-	-
101-14-4	Methylene bis(2-chloroanilin	-	-	-	-	-	-	-	-
74-95-3	Methylene Bromide	-	-	-	-	-	-	-	-
75-09-2	Methylene chloride (Dichlor	-	-	-	-	-	-	-	-
101-68-8	Methylene diphenyl diisocya	-	-	-	-	-	-	-	-
101-77-9	Methylenedianiline, 4,4-	-	-	-	-	-	-	-	-
90-94-8	Michler's ketone	-	-	-	-	-	-	-	-
10595-95-6	N- Nitrosomethylethylamine	-	-	-	-	-	-	-	-
924-16-3	N-Nitrosodi-n-butylamine	-	-	-	-	-	-	-	-
621-64-7	N-Nitrosodi-n-propylamine	-	-	-	-	-	-	-	-
55-18-5	N-Nitrosodiethylamine	-	-	-	-	-	-	-	-
62-75-9	N-Nitrosodimethylamine	-	-	-	-	-	-	-	-
86-30-6	N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-
59-89-2	N-Nitrosomorpholine	-	-	-	-	-	-	-	-
100-75-4	N-Nitrosopiperidine	-	-	-	-	-	-	-	-

111-84-2	N-Nonane	-	-	-	-	-	-	-	-
64724-95-6	Naphtha, High Flash Aroma	-	-	-	-	-	-	-	-
91-20-3	Naphthalene	-	-	-	-	-	-	-	-
193-09-9	Naphtho[2,3-e]pyrene	-	-	-	-	-	-	-	-
7440-02-0	Nickel	-	-	-	-	-	-	-	-
NICKEL-COM	Nickel Compounds	-	-	-	-	-	-	-	-
1313-99-1	Nickel oxide	-	-	-	-	-	-	-	-
0-02-5	Nickel refinery dust from the	-	-	-	-	-	-	-	-
12035-72-2	Nickel sulfide (NI3S2)	-	-	-	-	-	-	-	-
7697-37-2	Nitric acid	-	-	-	-	-	-	-	-
139-13-9	Nitrilotriacetic acid	-	-	-	-	-	-	-	-
18662-53-8	Nitrilotriacetic acid, trisodiu	-	-	-	-	-	-	-	-
602-87-9	Nitroacenaphthene, 5-	-	-	-	-	-	-	-	-
88-74-4	Nitroaniline, 2-	-	-	-	-	-	-	-	-
100-01-6	Nitroaniline, 4-	-	-	-	-	-	-	-	-
98-95-3	Nitrobenzene	-	-	-	-	-	-	-	-
7496-02-8	Nitrochrysene, 6-	-	-	-	-	-	-	-	-
607-57-8	Nitrofluorene, 2-	-	-	-	-	-	-	-	-
10102-44-0	Nitrogen dioxide (NO2)	-	-	-	-	-	-	-	-
75-52-5	Nitromethane	-	-	-	-	-	-	-	-
79-46-9	Nitropropane, 2-	-	-	-	-	-	-	-	-
5522-43-0	Nitropyrene, 1-	-	-	-	-	-	-	-	-
57835-92-4	Nitropyrene, 4-	-	-	-	-	-	-	-	-
156-10-5	Nitrosodiphenylamine, p-	-	-	-	-	-	-	-	-
3268-87-9	Octachlorodibenzo-p-dioxin,	-	-	-	-	-	-	-	-
39001-02-0	Octachlorodibenzofuran, 1,2	-	-	-	-	-	-	-	-
10028-15-6	Ozone	-	-	-	-	-	-	-	-
74472-37-0	PCB 114 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
31508-00-6	PCB 118 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
65510-44-3	PCB 123 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
57465-28-8	PCB 126 (3,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
38380-0804	PCB 156 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Hep	-	-	-	-	-	-	-	-
32598-13-3	PCB 77 (3,3,4,4-Tetrachloro	-	-	-	-	-	-	-	-
70362-50-4	PCB 81 (3,4,4,5 Tetrachloro	-	-	-	-	-	-	-	-
32598-14-4	PCB105 (2,3,3,4,4 Pentachl	-	-	-	-	-	-	-	-
40321-76-4	Pentachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-1	Pentachlorodibenzodioxins,	-	-	-	-	-	-	-	-
57117-41-6	Pentachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
57117-31-4	Pentachlorodibenzofuran, 2	-	-	-	-	-	-	-	-
00-09-0	Pentachlorodibenzofurans,	-	-	-	-	-	-	-	-
87-86-5	Pentachlorophenol	-	-	-	-	-	-	-	-
109-66-0	Pentane, n-	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
85-01-8	Phenanthrene	-	-	-	-	-	-	-	-
108-95-2	Phenol	-	-	-	-	-	-	-	-
75-44-5	Phosgene	-	-	-	-	-	-	-	-
7803-51-2	Phosphine	-	-	-	-	-	-	-	-
7664-38-2	Phosphoric acid	-	-	-	-	-	-	-	-
85-44-9	Phthalic anhydride	-	-	-	-	-	-	-	-
59536-65-1	Polybrominated Biphenyls	-	-	-	-	-	-	-	-
1336-36-3	Polychlorinated biphenyls (A	-	-	-	-	-	-	-	-
00-08-0	Polychlorinated Dibenzo-P-	-	-	-	-	-	-	-	-
00-05-0	Polychlorinated Dibenzodio	-	-	-	-	-	-	-	-
00-05-1	Polychlorinated Dibenzofura	-	-	-	-	-	-	-	-
130498-29-2	Polycyclic Aromatic Hydroca	-	-	-	-	-	-	-	-
00-01-7	Polycyclic Organic Matter (P	-	-	-	-	-	-	-	-
9016-87-9	Polymeric diphenylmethane	-	-	-	-	-	-	-	-
7758-01-2	Potassium bromate	-	-	-	-	-	-	-	-
1120-71-4	Propane sultone, 1,3-	-	-	-	-	-	-	-	-
57-57-8	Propiolactone, beta-	-	-	-	-	-	-	-	-
123-38-6	Propionaldehyde	-	-	-	-	-	-	-	-
115-07-1	Propylene	-	-	-	-	-	-	-	-
78-87-5	Propylene dichloride (1,2-Di	-	-	-	-	-	-	-	-
107-98-2	Propylene Glycol Monometh	-	-	-	-	-	-	-	-
75-56-9	Propylene oxide	-	-	-	-	-	-	-	-
930-55-2	Pyrrolidine, 1-Nitroso-	-	-	-	-	-	-	-	-
7782-49-2	Selenium	-	-	-	-	-	-	-	-
0-01-9	Selenium Compounds	-	-	-	-	-	-	-	-
7631-86-9	Silica (crystalline, respirable	-	-	-	-	-	-	-	-
1310-73-2	Sodium hydroxide	-	-	-	-	-	-	-	-
10588-01-9	Sodium Dichromate	-	-	-	-	-	-	-	-
7789-06-2	Strontium chromate	-	-	-	-	-	-	-	-
100-42-5	Styrene	-	-	-	-	-	-	-	-
96-09-3	Styrene oxide	-	-	-	-	-	-	-	-
14808-79-8	Sulfates	-	-	-	-	-	-	-	-
126-33-0	Sulfolane	-	-	-	-	-	-	-	-
7446-09-5	Sulfur dioxide	-	-	-	-	-	-	-	-
7664-93-9	Sulfuric acid (aerosol forms	-	-	-	-	-	-	-	-
8014-95-7	Sulfuric Acid mixture w. sulf	-	-	-	-	-	-	-	-
00-09-1	TCDD Eqivalents, 2,3,7,8-	-	-	-	-	-	-	-	-
540-88-5	Tert-Butyl Acetate	-	-	-	-	-	-	-	-
1746-01-6	Tetrachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-8	Tetrachlorodibenzodioxins,	-	-	-	-	-	-	-	-
51207-31-9	Tetrachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-

00-08-6	Tetrachlorodibenzofurans, A	-	-	-	-	-	-	-	-
630-20-6	Tetrachloroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
79-34-5	Tetrachloroethane, 1,1,2,2-	-	-	-	-	-	-	-	-
127-18-4	Tetrachloroethylene (Perchl	-	-	-	-	-	-	-	-
811-97-2	Tetrafluoroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
109-99-9	Tetrahydrofuran	-	-	-	-	-	-	-	-
62-55-5	Thioacetamide	-	-	-	-	-	-	-	-
62-56-6	Thiourea	-	-	-	-	-	-	-	-
108-88-3	Toluene	-	-	-	-	-	-	-	-
584-84-9	Toluene-2,4-diisocyanate	-	-	-	-	-	-	-	-
91-08-7	Toluene-2,6-diisocyanate	-	-	-	-	-	-	-	-
95-80-7	Toluene diamine, 2,4-	-	-	-	-	-	-	-	-
26471-62-5	Toluenediisocyanate (mixed	-	-	-	-	-	-	-	-
95-53-4	Toluidine, o- (Methylaniline,	-	-	-	-	-	-	-	-
8001-35-2	Toxaphene (chlorinated ca	-	-	-	-	-	-	-	-
10061-02-6	trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-
120-82-1	Trichlorobenzene, 1,2,4-	-	-	-	-	-	-	-	-
79-00-5	Trichloroethane, 1,1,2-	-	-	-	-	-	-	-	-
79-01-6	Trichloroethylene (TCE)	-	-	-	-	-	-	-	-
75-69-4	Trichlorofluoromethane (CF	-	-	-	-	-	-	-	-
88-06-2	Trichlorophenol, 2,4,6-	-	-	-	-	-	-	-	-
96-18-4	Trichloropropane, 1,2,3-	-	-	-	-	-	-	-	-
96-19-5	Trichloropropene, 1,2,3-	-	-	-	-	-	-	-	-
76-13-1	Trichlorotrifluoroethane, 1,1	-	-	-	-	-	-	-	-
121-44-8	Triethylamine	-	-	-	-	-	-	-	-
420-46-2	Trifluoroethane, 1,1,1-	-	-	-	-	-	-	-	-
526-73-8	Trimethylbenzene, 1,2,3-	-	-	-	-	-	-	-	-
95-63-6	Trimethylbenzene, 1,2,4-	-	-	-	-	-	-	-	-
108-67-8	Trimethylbenzene, 1,3,5-	-	-	-	-	-	-	-	-
URANIUM-SO	Uranium (Soluble Salts)	-	-	-	-	-	-	-	-
7440-61-1	Uranium, Insoluble Compou	-	-	-	-	-	-	-	-
7440-62-2	Vanadium and Compounds	-	-	-	-	-	-	-	-
1314-62-1	Vanadium Pentoxide, (V2O	-	-	-	-	-	-	-	-
108-05-4	Vinyl acetate	-	-	-	-	-	-	-	-
593-60-2	Vinyl bromide	-	-	-	-	-	-	-	-
75-01-4	Vinyl chloride	-	-	-	-	-	-	-	-
1330-20-7	Xylenes	-	-	-	-	-	-	-	-
108-38-3	Xylenes, m-	-	-	-	-	-	-	-	-
95-47-6	Xylenes, o-	-	-	-	-	-	-	-	-
106-42-3	Xylenes, p-	-	-	-	-	-	-	-	-
13530-65-9	Zinc chromate	-	-	-	-	-	-	-	-

RASS version: 2020-12

No inputs needed on this page

Air Concentrations in ug/m3

		Stack #8				Stack #9			
CAS# or MPCA#	**Chemical Name**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**
202-94-8	11H-Benz[b,c]aceanthrylene	-	-	-	-	-	-	-	-
202-98-2	4H-Cyclopenta[d,e,f]chrysen	-	-	-	-	-	-	-	-
75-07-0	Acetaldehyde	-	-	-	-	-	-	-	-
60-35-5	Acetamide	-	-	-	-	-	-	-	-
67-64-1	Acetone	-	-	-	-	-	-	-	-
75-86-5	Acetone Cyanohydrin	-	-	-	-	-	-	-	-
75-05-8	Acetonitrile	-	-	-	-	-	-	-	-
53-96-3	Acetylaminofluorene, 2-	-	-	-	-	-	-	-	-
107-02-8	Acrolein	-	-	-	-	-	-	-	-
79-06-1	Acrylamide	-	-	-	-	-	-	-	-
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-	-	-	-	-	-	-	-	-
79-10-7	Acrylic acid	-	-	-	-	-	-	-	-
107-13-1	Acrylonitrile	-	-	-	-	-	-	-	-
111-69-3	Adiponitrile	-	-	-	-	-	-	-	-
ALDEHYDES	Aldehydes	-	-	-	-	-	-	-	-
309-00-2	Aldrin	-	-	-	-	-	-	-	-
ALIPHATIC-M	Aliphatic Hydrocarbon Strea	-	-	-	-	-	-	-	-
107-05-1	Allyl chloride	-	-	-	-	-	-	-	-
7429-90-5	Aluminum	-	-	-	-	-	-	-	-
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3	-	-	-	-	-	-	-	-
6109-97-3	Amino-9-ethylcarbazolehydr	-	-	-	-	-	-	-	-
117-79-3	Aminoanthraquinone, 2-	-	-	-	-	-	-	-	-
7664-41-7	Ammonia	-	-	-	-	-	-	-	-
62-53-3	Aniline	-	-	-	-	-	-	-	-
191-26-4	Anthanthrene	-	-	-	-	-	-	-	-
7440-36-0	Antimony	-	-	-	-	-	-	-	-
ANTIMONY-C	Antimony Compounds	-	-	-	-	-	-	-	-
1309-64-4	Antimony trioxide	-	-	-	-	-	-	-	-
140-57-8	Aramite	-	-	-	-	-	-	-	-
7440-38-2	Arsenic	-	-	-	-	-	-	-	-
ARSENIC-CO	Arsenic Compounds	-	-	-	-	-	-	-	-
1327-53-3	Arsenic Trioxide	-	-	-	-	-	-	-	-
7784-42-1	Arsine	-	-	-	-	-	-	-	-
1332-21-4	Asbestos (units in fibers)	-	-	-	-	-	-	-	-
1332-21-4-LA	Asbestos, Libby Amphibole	-	-	-	-	-	-	-	-
123-77-3	Azodicarbonamide	-	-	-	-	-	-	-	-
10294-40-3	Barium Chromate	-	-	-	-	-	-	-	-
199-54-2	Benz[e]aceanthrylene	-	-	-	-	-	-	-	-
202-33-5	Benz[j]aceanthrylene	-	-	-	-	-	-	-	-
211-91-6	Benz[l]aceanthrylene	-	-	-	-	-	-	-	-
71-43-2	Benzene	-	-	-	-	-	-	-	-
92-87-5	Benzidine	-	-	-	-	-	-	-	-
205-82-3	Benzo(j)fluoranthene	-	-	-	-	-	-	-	-
207-08-9	Benzo(k)fluoranthene	-	-	-	-	-	-	-	-
56-55-3	Benzo[a]anthracene	-	-	-	-	-	-	-	-
50-32-8	Benzo[a]pyrene	-	-	-	-	-	-	-	-
205-99-2	Benzo[b]fluoranthene	-	-	-	-	-	-	-	-
205-12-9	Benzo[c]fluorene	-	-	-	-	-	-	-	-
191-24-2	Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-
65-85-0	Benzoic Acid	-	-	-	-	-	-	-	-
100-44-7	Benzyl chloride	-	-	-	-	-	-	-	-
7440-41-7	Beryllium	-	-	-	-	-	-	-	-
BERYLLIUM-	Beryllium Compounds	-	-	-	-	-	-	-	-
13510-49-1	Beryllium sulfate	-	-	-	-	-	-	-	-
111-44-4	Bis(2-chloroethyl)ether	-	-	-	-	-	-	-	-
117-81-7	Bis(2-ethylhexyl)phthalate (	-	-	-	-	-	-	-	-
542-88-1	Bis(chloromethyl)ether	-	-	-	-	-	-	-	-
7440-42-8	Boron And Borates Only	-	-	-	-	-	-	-	-
10294-34-5	Boron Trichloride	-	-	-	-	-	-	-	-
7637-07-2	Boron Trifluoride	-	-	-	-	-	-	-	-
108-86-1	Bromobenzene	-	-	-	-	-	-	-	-
74-97-5	Bromochloromethane	-	-	-	-	-	-	-	-
75-27-4	Bromodichloromethane	-	-	-	-	-	-	-	-
75-25-2	Bromoform	-	-	-	-	-	-	-	-
74-83-9	Bromomethane	-	-	-	-	-	-	-	-
106-94-5	Bromopropane, 1-	-	-	-	-	-	-	-	-
106-99-0	Butadiene, 1,3-	-	-	-	-	-	-	-	-
78-92-2	Butyl alcohol, sec-	-	-	-	-	-	-	-	-
111-76-2	Butyl Cellosolve (ethylene g	-	-	-	-	-	-	-	-
25013-16-5	Butylated hydroxyanisole	-	-	-	-	-	-	-	-
3068-88-0	Butyrolactone, beta-	-	-	-	-	-	-	-	-
7440-43-9	Cadmium	-	-	-	-	-	-	-	-
CADMIUM-CO	Cadmium Compounds	-	-	-	-	-	-	-	-
13765-19-0	Calcium Chromate	-	-	-	-	-	-	-	-
105-60-2	Caprolactum	-	-	-	-	-	-	-	-
75-15-0	Carbon disulfide	-	-	-	-	-	-	-	-
630-08-0	Carbon Monoxide	-	-	-	-	-	-	-	-
56-23-5	Carbon tetrachloride	-	-	-	-	-	-	-	-
463-58-1	Carbonyl sulfide	-	-	-	-	-	-	-	-
111-15-9	Cellosolve Acetate (ethylen	-	-	-	-	-	-	-	-
1306-38-3	Cerium Oxide and Cerium C	-	-	-	-	-	-	-	-
12789-03-6	Chlordane or (57-74-9)	-	-	-	-	-	-	-	-
115-28-6	Chlorendic acid	-	-	-	-	-	-	-	-
108171-26-2	Chlorinated Paraffins (C12,	-	-	-	-	-	-	-	-
7782-50-5	Chlorine	-	-	-	-	-	-	-	-

10049-04-4	Chlorine Oxide (CLO2)	-	-	-	-	-	-	-	-
75-68-3	Chloro-1,1-difluoroethane, 1	-	-	-	-	-	-	-	-
563-47-3	Chloro-2-methylpropene, 3-	-	-	-	-	-	-	-	-
95-83-0	Chloro-o-phenylenediamine	-	-	-	-	-	-	-	-
95-69-2	Chloro-o-toluidine, p-	-	-	-	-	-	-	-	-
532-27-4	Chloroacetophenone, 2-	-	-	-	-	-	-	-	-
108-90-7	Chlorobenzene	-	-	-	-	-	-	-	-
98-56-6	Chlorobenzotrifluoride, 4-	-	-	-	-	-	-	-	-
75-45-6	Chlorodifluoromethane (HC	-	-	-	-	-	-	-	-
67-66-3	Chloroform	-	-	-	-	-	-	-	-
107-30-2	Chloromethyl Methyl Ether	-	-	-	-	-	-	-	-
88-73-3	Chloronitrobenzene, o-	-	-	-	-	-	-	-	-
100-00-5	Chloronitrobenzene, p-	-	-	-	-	-	-	-	-
76-06-2	Chloropicrin	-	-	-	-	-	-	-	-
126-99-8	Chloroprene	-	-	-	-	-	-	-	-
1333-82-0	Chromic acid mists and diss	-	-	-	-	-	-	-	-
7440-47-3	Chromium	-	-	-	-	-	-	-	-
18540-29-9	Chromium (Hexavalent)	-	-	-	-	-	-	-	-
18540-29-9-p	Chromium (Hexavalent) - P	-	-	-	-	-	-	-	-
CHROM-COM	Chromium Compounds	-	-	-	-	-	-	-	-
16065-83-1	Chromium(III) Compounds	-	-	-	-	-	-	-	-
218-01-9	Chrysene (Benzo(a)phenan	-	-	-	-	-	-	-	-
87-29-6	Cinnamyl anthranilate	-	-	-	-	-	-	-	-
10061-01-5	cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-
8007-45-2	Coal Tar	-	-	-	-	-	-	-	-
7440-48-4	Cobalt	-	-	-	-	-	-	-	-
0-00-7	Coke Oven Emissions	-	-	-	-	-	-	-	-
7440-50-8	Copper	-	-	-	-	-	-	-	-
COPPER-CO	Copper Compounds	-	-	-	-	-	-	-	-
120-71-8	Cresidine, p-	-	-	-	-	-	-	-	-
108-39-4	Cresol, m-	-	-	-	-	-	-	-	-
95-48-7	Cresol, o-	-	-	-	-	-	-	-	-
106-44-5	Cresol, p-	-	-	-	-	-	-	-	-
1319-77-3	Cresols/Cresylic acid (isome	-	-	-	-	-	-	-	-
98-82-8	Cumene	-	-	-	-	-	-	-	-
135-20-6	Cupferron	-	-	-	-	-	-	-	-
57-12-5	Cyanide (Cyanide ion, Inorg	-	-	-	-	-	-	-	-
CYANIDE-CO	Cyanide Compounds	-	-	-	-	-	-	-	-
110-82-7	Cyclohexane	-	-	-	-	-	-	-	-
108-94-1	Cyclohexanone	-	-	-	-	-	-	-	-
27208-37-3	Cyclopenta[c,d]pyrene	-	-	-	-	-	-	-	-
50-29-3	DDT	-	-	-	-	-	-	-	-
615-05-4	Diaminoanisole, 2,4-	-	-	-	-	-	-	-	-
101-80-4	Diaminodiphenyl ether, 4,4-	-	-	-	-	-	-	-	-
103-33-3	Diazene, Diphenyl	-	-	-	-	-	-	-	-
226-36-8	Dibenz(a,h)acridine	-	-	-	-	-	-	-	-
224-42-0	Dibenz(a,j)acridine	-	-	-	-	-	-	-	-
53-70-3	Dibenz[a,h]anthracene	-	-	-	-	-	-	-	-
192-65-4	Dibenzo(a,e)pyrene	-	-	-	-	-	-	-	-
189-64-0	Dibenzo(a,h)pyrene	-	-	-	-	-	-	-	-
191-30-0	Dibenzo(a,l)pyrene	-	-	-	-	-	-	-	-
194-59-2	Dibenzo(c,g)carbazole, 7H-	-	-	-	-	-	-	-	-
5385-75-1	Dibenzo[a,e]fluoranthene	-	-	-	-	-	-	-	-
189-55-9	Dibenzo[a,i]pyrene	-	-	-	-	-	-	-	-
96-12-8	Dibromo-3-chloropropane, 1	-	-	-	-	-	-	-	-
764-41-0	Dichloro-2-butene, 1,4-	-	-	-	-	-	-	-	-
1476-11-5	Dichloro-2-butene, cis-1,4-	-	-	-	-	-	-	-	-
106-46-7	Dichlorobenzene(p), 1,4-	-	-	-	-	-	-	-	-
25321-22-6	Dichlorobenzenes	-	-	-	-	-	-	-	-
91-94-1	Dichlorobenzidene, 3,3-	-	-	-	-	-	-	-	-
75-71-8	Dichlorodifluoromethane (C	-	-	-	-	-	-	-	-
75-35-4	Dichloroethylene (1,1-) (Vin	-	-	-	-	-	-	-	-
156-60-5	Dichloroethylene, trans-1,2-	-	-	-	-	-	-	-	-
542-75-6	Dichloropropene, 1,3-	-	-	-	-	-	-	-	-
78-88-6	Dichloropropene, 2,3-	-	-	-	-	-	-	-	-
62-73-7	Dichlorvos	-	-	-	-	-	-	-	-
77-73-6	Dicyclopentadiene	-	-	-	-	-	-	-	-
60-57-1	Dieldrin	-	-	-	-	-	-	-	-
0-02-4	Diesel exhaust particulate	-	-	-	-	-	-	-	-
111-42-2	Diethanolamine	-	-	-	-	-	-	-	-
112-34-5	Diethylene Glycol Monobuty	-	-	-	-	-	-	-	-
111-90-0	Diethylene Glycol Monoethy	-	-	-	-	-	-	-	-
75-37-6	Difluoroethane, 1,1-	-	-	-	-	-	-	-	-
108-20-3	Diisopropyl Ether	-	-	-	-	-	-	-	-
60-11-7	Dimethyl aminoazobenzene	-	-	-	-	-	-	-	-
68-12-2	Dimethyl formamide	-	-	-	-	-	-	-	-
108-01-0	Dimethylamino ethanol, 2-	-	-	-	-	-	-	-	-
57-97-6	Dimethylbenz[a]anthracene,	-	-	-	-	-	-	-	-
57-14-7	Dimethylhydrazine, 1,1-	-	-	-	-	-	-	-	-
42397-64-8	Dinitropyrene, 1,6- (BaP)	-	-	-	-	-	-	-	-
42397-65-9	Dinitropyrene, 1,8- (BaP)	-	-	-	-	-	-	-	-
121-14-2	Dinitrotoluene, 2,4-	-	-	-	-	-	-	-	-
123-91-1	Dioxane, 1,4- (1,4-Diethylen	-	-	-	-	-	-	-	-
122-66-7	Diphenylhydrazine, 1,2-	-	-	-	-	-	-	-	-
106-89-8	Epichlorohydrin (l-Chloro-2,	-	-	-	-	-	-	-	-
106-88-7	Epoxybutane, 1,2-	-	-	-	-	-	-	-	-
110-80-5	Ethoxyethanol, 2- (ethylene	-	-	-	-	-	-	-	-
141-78-6	Ethyl acetate	-	-	-	-	-	-	-	-
140-88-5	Ethyl Acrylate	-	-	-	-	-	-	-	-
100-41-4	Ethyl benzene	-	-	-	-	-	-	-	-
51-79-6	Ethyl carbamate (Urethane)	-	-	-	-	-	-	-	-

75-00-3	Ethyl chloride (Chloroethane	-	-	-	-	-	-	-	-
97-63-2	Ethyl Methacrylate	-	-	-	-	-	-	-	-
106-93-4	Ethylene dibromide (Dibrom	-	-	-	-	-	-	-	-
107-06-2	Ethylene dichloride (1,2-Dic	-	-	-	-	-	-	-	-
107-21-1	Ethylene glycol	-	-	-	-	-	-	-	-
75-21-8	Ethylene oxide	-	-	-	-	-	-	-	-
96-45-7	Ethylene thiourea	-	-	-	-	-	-	-	-
75-34-3	Ethylidene dichloride (1,1-D	-	-	-	-	-	-	-	-
206-44-0	Fluoranthene	-	-	-	-	-	-	-	-
FLUORIDES	Fluorides (except hydrogen	-	-	-	-	-	-	-	-
50-00-0	Formaldehyde	-	-	-	-	-	-	-	-
64-18-6	Formic Acid	-	-	-	-	-	-	-	-
111-30-8	Glutaraldehyde	-	-	-	-	-	-	-	-
0-01-2	Glycol ethers	-	-	-	-	-	-	-	-
76-44-8	Heptachlor	-	-	-	-	-	-	-	-
1024-57-3	Heptachlor epoxide	-	-	-	-	-	-	-	-
35822-46-9	Heptachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-5	Heptachlorodibenzodioxin,	-	-	-	-	-	-	-	-
67562-39-4	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
55673-89-7	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
00-08-4	Heptachlorodibenzofuran, A	-	-	-	-	-	-	-	-
142-82-5	Heptane, N	-	-	-	-	-	-	-	-
118-74-1	Hexachlorobenzene	-	-	-	-	-	-	-	-
87-68-3	Hexachlorobutadiene	-	-	-	-	-	-	-	-
608-73-1	Hexachlorocyclohexane (tec	-	-	-	-	-	-	-	-
319-84-6	Hexachlorocyclohexane, alp	-	-	-	-	-	-	-	-
319-85-7	Hexachlorocyclohexane, be	-	-	-	-	-	-	-	-
77-47-4	Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-
39227-28-6	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
57653-85-7	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
19408-74-3	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-3	Hexachlorodibenzodioxins,	-	-	-	-	-	-	-	-
70648-26-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
57117-44-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
72918-21-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
60851-34-5	Hexachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-
00-08-2	Hexachlorodibenzofurans, A	-	-	-	-	-	-	-	-
67-72-1	Hexachloroethane	-	-	-	-	-	-	-	-
822-06-0	Hexamethylene-1,6-diisocya	-	-	-	-	-	-	-	-
110-54-3	Hexane	-	-	-	-	-	-	-	-
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl	-	-	-	-	-	-	-	-
591-78-6	Hexanone-2	-	-	-	-	-	-	-	-
302-01-2	Hydrazine	-	-	-	-	-	-	-	-
10034-93-2	Hydrazine sulfate	-	-	-	-	-	-	-	-
7647-01-0	Hydrochloric acid (hydrogen	-	-	-	-	-	-	-	-
74-90-8	Hydrogen cyanide	-	-	-	-	-	-	-	-
7664-39-3	Hydrogen fluoride (Hydroflu	-	-	-	-	-	-	-	-
7783-07-5	Hydrogen selenide	-	-	-	-	-	-	-	-
7783-06-4	Hydrogen sulfide	-	-	-	-	-	-	-	-
193-39-5	Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-
5888-33-5	Isobornyl acrylate	-	-	-	-	-	-	-	-
78-59-1	Isophorone	-	-	-	-	-	-	-	-
67-63-0	Isopropyl alcohol	-	-	-	-	-	-	-	-
7439-92-1	Lead	-	-	-	-	-	-	-	-
7758-97-6	Lead Chromate	-	-	-	-	-	-	-	-
LEAD-COMP	Lead Compounds	-	-	-	-	-	-	-	-
58-89-9	Lindane (all isomers)	-	-	-	-	-	-	-	-
108-31-6	Maleic anhydride	-	-	-	-	-	-	-	-
7439-96-5	Manganese	-	-	-	-	-	-	-	-
MANGANESE	Manganese Compounds	-	-	-	-	-	-	-	-
7439-97-6	Mercury (elemental)	-	-	-	-	-	-	-	-
MERCURY-C	Mercury Compounds	-	-	-	-	-	-	-	-
126-98-7	Methacrylonitrile	-	-	-	-	-	-	-	-
67-56-1	Methanol	-	-	-	-	-	-	-	-
109-86-4	Methoxyethanol, 2- (ethylen	-	-	-	-	-	-	-	-
96-33-3	Methyl acrylate	-	-	-	-	-	-	-	-
110-49-6	Methyl Cellosolve Acetate	-	-	-	-	-	-	-	-
74-87-3	Methyl chloride (Chlorometh	-	-	-	-	-	-	-	-
71-55-6	Methyl chloroform (1,1,1-Tri	-	-	-	-	-	-	-	-
78-93-3	Methyl ethyl ketone (2-Buta	-	-	-	-	-	-	-	-
60-34-4	Methyl Hydrazine	-	-	-	-	-	-	-	-
108-10-1	Methyl isobutyl ketone (Hex	-	-	-	-	-	-	-	-
624-83-9	Methyl isocyanate	-	-	-	-	-	-	-	-
80-62-6	Methyl methacrylate	-	-	-	-	-	-	-	-
1634-04-4	Methyl tert butyl ether	-	-	-	-	-	-	-	-
56-49-5	Methylcholanthrene, 3-	-	-	-	-	-	-	-	-
3697-24-3	Methylchrysene, 5-	-	-	-	-	-	-	-	-
101-14-4	Methylene bis(2-chloroanilin	-	-	-	-	-	-	-	-
74-95-3	Methylene Bromide	-	-	-	-	-	-	-	-
75-09-2	Methylene chloride (Dichlor	-	-	-	-	-	-	-	-
101-68-8	Methylene diphenyl diisocya	-	-	-	-	-	-	-	-
101-77-9	Methylenedianiline, 4,4-	-	-	-	-	-	-	-	-
90-94-8	Michler's ketone	-	-	-	-	-	-	-	-
10595-95-6	N- Nitrosomethylethylamine	-	-	-	-	-	-	-	-
924-16-3	N-Nitrosodi-n-butylamine	-	-	-	-	-	-	-	-
621-64-7	N-Nitrosodi-n-propylamine	-	-	-	-	-	-	-	-
55-18-5	N-Nitrosodiethylamine	-	-	-	-	-	-	-	-
62-75-9	N-Nitrosodimethylamine	-	-	-	-	-	-	-	-
86-30-6	N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-
59-89-2	N-Nitrosomorpholine	-	-	-	-	-	-	-	-
100-75-4	N-Nitrosopiperidine	-	-	-	-	-	-	-	-

111-84-2	N-Nonane	-	-	-	-	-	-	-	-
64724-95-6	Naphtha, High Flash Aroma	-	-	-	-	-	-	-	-
91-20-3	Naphthalene	-	-	-	-	-	-	-	-
193-09-9	Naphtho[2,3-e]pyrene	-	-	-	-	-	-	-	-
7440-02-0	Nickel	-	-	-	-	-	-	-	-
NICKEL-COM	Nickel Compounds	-	-	-	-	-	-	-	-
1313-99-1	Nickel oxide	-	-	-	-	-	-	-	-
0-02-5	Nickel refinery dust from the	-	-	-	-	-	-	-	-
12035-72-2	Nickel sulfide (NI3S2)	-	-	-	-	-	-	-	-
7697-37-2	Nitric acid	-	-	-	-	-	-	-	-
139-13-9	Nitrilotriacetic acid	-	-	-	-	-	-	-	-
18662-53-8	Nitrilotriacetic acid, trisodiu	-	-	-	-	-	-	-	-
602-87-9	Nitroacenaphthene, 5-	-	-	-	-	-	-	-	-
88-74-4	Nitroaniline, 2-	-	-	-	-	-	-	-	-
100-01-6	Nitroaniline, 4-	-	-	-	-	-	-	-	-
98-95-3	Nitrobenzene	-	-	-	-	-	-	-	-
7496-02-8	Nitrochrysene, 6-	-	-	-	-	-	-	-	-
607-57-8	Nitrofluorene, 2-	-	-	-	-	-	-	-	-
10102-44-0	Nitrogen dioxide (NO2)	-	-	-	-	-	-	-	-
75-52-5	Nitromethane	-	-	-	-	-	-	-	-
79-46-9	Nitropropane, 2-	-	-	-	-	-	-	-	-
5522-43-0	Nitropyrene, 1-	-	-	-	-	-	-	-	-
57835-92-4	Nitropyrene, 4-	-	-	-	-	-	-	-	-
156-10-5	Nitrosodiphenylamine, p-	-	-	-	-	-	-	-	-
3268-87-9	Octachlorodibenzo-p-dioxin,	-	-	-	-	-	-	-	-
39001-02-0	Octachlorodibenzofuran, 1,2	-	-	-	-	-	-	-	-
10028-15-6	Ozone	-	-	-	-	-	-	-	-
74472-37-0	PCB 114 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
31508-00-6	PCB 118 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
65510-44-3	PCB 123 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
57465-28-8	PCB 126 (3,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
38380-0804	PCB 156 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Hep	-	-	-	-	-	-	-	-
32598-13-3	PCB 77 (3,3,4,4-Tetrachloro	-	-	-	-	-	-	-	-
70362-50-4	PCB 81 (3,4,4,5 Tetrachloro	-	-	-	-	-	-	-	-
32598-14-4	PCB105 (2,3,3,4,4 Pentachl	-	-	-	-	-	-	-	-
40321-76-4	Pentachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-1	Pentachlorodibenzodioxins,	-	-	-	-	-	-	-	-
57117-41-6	Pentachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
57117-31-4	Pentachlorodibenzofuran, 2	-	-	-	-	-	-	-	-
00-09-0	Pentachlorodibenzofurans,	-	-	-	-	-	-	-	-
87-86-5	Pentachlorophenol	-	-	-	-	-	-	-	-
109-66-0	Pentane, n-	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
85-01-8	Phenanthrene	-	-	-	-	-	-	-	-
108-95-2	Phenol	-	-	-	-	-	-	-	-
75-44-5	Phosgene	-	-	-	-	-	-	-	-
7803-51-2	Phosphine	-	-	-	-	-	-	-	-
7664-38-2	Phosphoric acid	-	-	-	-	-	-	-	-
85-44-9	Phthalic anhydride	-	-	-	-	-	-	-	-
59536-65-1	Polybrominated Biphenyls	-	-	-	-	-	-	-	-
1336-36-3	Polychlorinated biphenyls (A	-	-	-	-	-	-	-	-
00-08-0	Polychlorinated Dibenzo-P-	-	-	-	-	-	-	-	-
00-05-0	Polychlorinated Dibenzodio	-	-	-	-	-	-	-	-
00-05-1	Polychlorinated Dibenzofura	-	-	-	-	-	-	-	-
130498-29-2	Polycyclic Aromatic Hydroca	-	-	-	-	-	-	-	-
00-01-7	Polycyclic Organic Matter (P	-	-	-	-	-	-	-	-
9016-87-9	Polymeric diphenylmethane	-	-	-	-	-	-	-	-
7758-01-2	Potassium bromate	-	-	-	-	-	-	-	-
1120-71-4	Propane sultone, 1,3-	-	-	-	-	-	-	-	-
57-57-8	Propiolactone, beta-	-	-	-	-	-	-	-	-
123-38-6	Propionaldehyde	-	-	-	-	-	-	-	-
115-07-1	Propylene	-	-	-	-	-	-	-	-
78-87-5	Propylene dichloride (1,2-Di	-	-	-	-	-	-	-	-
107-98-2	Propylene Glycol Monometh	-	-	-	-	-	-	-	-
75-56-9	Propylene oxide	-	-	-	-	-	-	-	-
930-55-2	Pyrrolidine, 1-Nitroso-	-	-	-	-	-	-	-	-
7782-49-2	Selenium	-	-	-	-	-	-	-	-
0-01-9	Selenium Compounds	-	-	-	-	-	-	-	-
7631-86-9	Silica (crystalline, respirable	-	-	-	-	-	-	-	-
1310-73-2	Sodium hydroxide	-	-	-	-	-	-	-	-
10588-01-9	Sodium Dichromate	-	-	-	-	-	-	-	-
7789-06-2	Strontium chromate	-	-	-	-	-	-	-	-
100-42-5	Styrene	-	-	-	-	-	-	-	-
96-09-3	Styrene oxide	-	-	-	-	-	-	-	-
14808-79-8	Sulfates	-	-	-	-	-	-	-	-
126-33-0	Sulfolane	-	-	-	-	-	-	-	-
7446-09-5	Sulfur dioxide	-	-	-	-	-	-	-	-
7664-93-9	Sulfuric acid (aerosol forms	-	-	-	-	-	-	-	-
8014-95-7	Sulfuric Acid mixture w. sulf	-	-	-	-	-	-	-	-
00-09-1	TCDD Eqivalents, 2,3,7,8-	-	-	-	-	-	-	-	-
540-88-5	Tert-Butyl Acetate	-	-	-	-	-	-	-	-
1746-01-6	Tetrachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-8	Tetrachlorodibenzodioxins,	-	-	-	-	-	-	-	-
51207-31-9	Tetrachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-

00-08-6	Tetrachlorodibenzofurans, A	-	-	-	-	-	-	-	-
630-20-6	Tetrachloroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
79-34-5	Tetrachloroethane, 1,1,2,2-	-	-	-	-	-	-	-	-
127-18-4	Tetrachloroethylene (Perchl	-	-	-	-	-	-	-	-
811-97-2	Tetrafluoroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
109-99-9	Tetrahydrofuran	-	-	-	-	-	-	-	-
62-55-5	Thioacetamide	-	-	-	-	-	-	-	-
62-56-6	Thiourea	-	-	-	-	-	-	-	-
108-88-3	Toluene	-	-	-	-	-	-	-	-
584-84-9	Toluene-2,4-diisocyanate	-	-	-	-	-	-	-	-
91-08-7	Toluene-2,6-diisocyanate	-	-	-	-	-	-	-	-
95-80-7	Toluene diamine, 2,4-	-	-	-	-	-	-	-	-
26471-62-5	Toluenediisocyanate (mixed	-	-	-	-	-	-	-	-
95-53-4	Toluidine, o- (Methylaniline,	-	-	-	-	-	-	-	-
8001-35-2	Toxaphene (chlorinated ca	-	-	-	-	-	-	-	-
10061-02-6	trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-
120-82-1	Trichlorobenzene, 1,2,4-	-	-	-	-	-	-	-	-
79-00-5	Trichloroethane, 1,1,2-	-	-	-	-	-	-	-	-
79-01-6	Trichloroethylene (TCE)	-	-	-	-	-	-	-	-
75-69-4	Trichlorofluoromethane (CF	-	-	-	-	-	-	-	-
88-06-2	Trichlorophenol, 2,4,6-	-	-	-	-	-	-	-	-
96-18-4	Trichloropropane, 1,2,3-	-	-	-	-	-	-	-	-
96-19-5	Trichloropropene, 1,2,3-	-	-	-	-	-	-	-	-
76-13-1	Trichlorotrifluoroethane, 1,1	-	-	-	-	-	-	-	-
121-44-8	Triethylamine	-	-	-	-	-	-	-	-
420-46-2	Trifluoroethane, 1,1,1-	-	-	-	-	-	-	-	-
526-73-8	Trimethylbenzene, 1,2,3-	-	-	-	-	-	-	-	-
95-63-6	Trimethylbenzene, 1,2,4-	-	-	-	-	-	-	-	-
108-67-8	Trimethylbenzene, 1,3,5-	-	-	-	-	-	-	-	-
URANIUM-SO	Uranium (Soluble Salts)	-	-	-	-	-	-	-	-
7440-61-1	Uranium, Insoluble Compou	-	-	-	-	-	-	-	-
7440-62-2	Vanadium and Compounds	-	-	-	-	-	-	-	-
1314-62-1	Vanadium Pentoxide, (V2O	-	-	-	-	-	-	-	-
108-05-4	Vinyl acetate	-	-	-	-	-	-	-	-
593-60-2	Vinyl bromide	-	-	-	-	-	-	-	-
75-01-4	Vinyl chloride	-	-	-	-	-	-	-	-
1330-20-7	Xylenes	-	-	-	-	-	-	-	-
108-38-3	Xylenes, m-	-	-	-	-	-	-	-	-
95-47-6	Xylenes, o-	-	-	-	-	-	-	-	-
106-42-3	Xylenes, p-	-	-	-	-	-	-	-	-
13530-65-9	Zinc chromate	-	-	-	-	-	-	-	-

RASS version: 2020-12

No inputs needed on this page

Air Concentrations in ug/m3

		Stack #10				Stack #11			
CAS# or MPCA#	**Chemical Name**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**
202-94-8	11H-Benz[b,c]aceanthrylene	-	-	-	-	-	-	-	-
202-98-2	4H-Cyclopenta[d,e,f]chrysen	-	-	-	-	-	-	-	-
75-07-0	Acetaldehyde	-	-	-	-	-	-	-	-
60-35-5	Acetamide	-	-	-	-	-	-	-	-
67-64-1	Acetone	-	-	-	-	-	-	-	-
75-86-5	Acetone Cyanohydrin	-	-	-	-	-	-	-	-
75-05-8	Acetonitrile	-	-	-	-	-	-	-	-
53-96-3	Acetylaminofluorene, 2-	-	-	-	-	-	-	-	-
107-02-8	Acrolein	-	-	-	-	-	-	-	-
79-06-1	Acrylamide	-	-	-	-	-	-	-	-
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-	-	-	-	-	-	-	-	-
79-10-7	Acrylic acid	-	-	-	-	-	-	-	-
107-13-1	Acrylonitrile	-	-	-	-	-	-	-	-
111-69-3	Adiponitrile	-	-	-	-	-	-	-	-
ALDEHYDES	Aldehydes	-	-	-	-	-	-	-	-
309-00-2	Aldrin	-	-	-	-	-	-	-	-
ALIPHATIC-M	Aliphatic Hydrocarbon Strea	-	-	-	-	-	-	-	-
107-05-1	Allyl chloride	-	-	-	-	-	-	-	-
7429-90-5	Aluminum	-	-	-	-	-	-	-	-
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3	-	-	-	-	-	-	-	-
6109-97-3	Amino-9-ethylcarbazolehydr	-	-	-	-	-	-	-	-
117-79-3	Aminoanthraquinone, 2-	-	-	-	-	-	-	-	-
7664-41-7	Ammonia	-	-	-	-	-	-	-	-
62-53-3	Aniline	-	-	-	-	-	-	-	-
191-26-4	Anthanthrene	-	-	-	-	-	-	-	-
7440-36-0	Antimony	-	-	-	-	-	-	-	-
ANTIMONY-C	Antimony Compounds	-	-	-	-	-	-	-	-
1309-64-4	Antimony trioxide	-	-	-	-	-	-	-	-
140-57-8	Aramite	-	-	-	-	-	-	-	-
7440-38-2	Arsenic	-	-	-	-	-	-	-	-
ARSENIC-CO	Arsenic Compounds	-	-	-	-	-	-	-	-
1327-53-3	Arsenic Trioxide	-	-	-	-	-	-	-	-
7784-42-1	Arsine	-	-	-	-	-	-	-	-
1332-21-4	Asbestos (units in fibers)	-	-	-	-	-	-	-	-
1332-21-4-LA	Asbestos, Libby Amphibole	-	-	-	-	-	-	-	-
123-77-3	Azodicarbonamide	-	-	-	-	-	-	-	-
10294-40-3	Barium Chromate	-	-	-	-	-	-	-	-
199-54-2	Benz[e]aceanthrylene	-	-	-	-	-	-	-	-
202-33-5	Benz[j]aceanthrylene	-	-	-	-	-	-	-	-
211-91-6	Benz[l]aceanthrylene	-	-	-	-	-	-	-	-
71-43-2	Benzene	-	-	-	-	-	-	-	-
92-87-5	Benzidine	-	-	-	-	-	-	-	-
205-82-3	Benzo(j)fluoranthene	-	-	-	-	-	-	-	-
207-08-9	Benzo(k)fluoranthene	-	-	-	-	-	-	-	-
56-55-3	Benzo[a]anthracene	-	-	-	-	-	-	-	-
50-32-8	Benzo[a]pyrene	-	-	-	-	-	-	-	-
205-99-2	Benzo[b]fluoranthene	-	-	-	-	-	-	-	-
205-12-9	Benzo[c]fluorene	-	-	-	-	-	-	-	-
191-24-2	Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-
65-85-0	Benzoic Acid	-	-	-	-	-	-	-	-
100-44-7	Benzyl chloride	-	-	-	-	-	-	-	-
7440-41-7	Beryllium	-	-	-	-	-	-	-	-
BERYLLIUM-	Beryllium Compounds	-	-	-	-	-	-	-	-
13510-49-1	Beryllium sulfate	-	-	-	-	-	-	-	-
111-44-4	Bis(2-chloroethyl)ether	-	-	-	-	-	-	-	-
117-81-7	Bis(2-ethylhexyl)phthalate (	-	-	-	-	-	-	-	-
542-88-1	Bis(chloromethyl)ether	-	-	-	-	-	-	-	-
7440-42-8	Boron And Borates Only	-	-	-	-	-	-	-	-
10294-34-5	Boron Trichloride	-	-	-	-	-	-	-	-
7637-07-2	Boron Trifluoride	-	-	-	-	-	-	-	-
108-86-1	Bromobenzene	-	-	-	-	-	-	-	-
74-97-5	Bromochloromethane	-	-	-	-	-	-	-	-
75-27-4	Bromodichloromethane	-	-	-	-	-	-	-	-
75-25-2	Bromoform	-	-	-	-	-	-	-	-
74-83-9	Bromomethane	-	-	-	-	-	-	-	-
106-94-5	Bromopropane, 1-	-	-	-	-	-	-	-	-
106-99-0	Butadiene, 1,3-	-	-	-	-	-	-	-	-
78-92-2	Butyl alcohol, sec-	-	-	-	-	-	-	-	-
111-76-2	Butyl Cellosolve (ethylene g	-	-	-	-	-	-	-	-
25013-16-5	Butylated hydroxyanisole	-	-	-	-	-	-	-	-
3068-88-0	Butyrolactone, beta-	-	-	-	-	-	-	-	-
7440-43-9	Cadmium	-	-	-	-	-	-	-	-
CADMIUM-CO	Cadmium Compounds	-	-	-	-	-	-	-	-
13765-19-0	Calcium Chromate	-	-	-	-	-	-	-	-
105-60-2	Caprolactum	-	-	-	-	-	-	-	-
75-15-0	Carbon disulfide	-	-	-	-	-	-	-	-
630-08-0	Carbon Monoxide	-	-	-	-	-	-	-	-
56-23-5	Carbon tetrachloride	-	-	-	-	-	-	-	-
463-58-1	Carbonyl sulfide	-	-	-	-	-	-	-	-
111-15-9	Cellosolve Acetate (ethylen	-	-	-	-	-	-	-	-
1306-38-3	Cerium Oxide and Cerium C	-	-	-	-	-	-	-	-
12789-03-6	Chlordane or (57-74-9)	-	-	-	-	-	-	-	-
115-28-6	Chlorendic acid	-	-	-	-	-	-	-	-
108171-26-2	Chlorinated Paraffins (C12,	-	-	-	-	-	-	-	-
7782-50-5	Chlorine	-	-	-	-	-	-	-	-

10049-04-4	Chlorine Oxide (CLO2)	-	-	-	-	-	-	-	-
75-68-3	Chloro-1,1-difluoroethane, 1	-	-	-	-	-	-	-	-
563-47-3	Chloro-2-methylpropene, 3-	-	-	-	-	-	-	-	-
95-83-0	Chloro-o-phenylenediamine	-	-	-	-	-	-	-	-
95-69-2	Chloro-o-toluidine, p-	-	-	-	-	-	-	-	-
532-27-4	Chloroacetophenone, 2-	-	-	-	-	-	-	-	-
108-90-7	Chlorobenzene	-	-	-	-	-	-	-	-
98-56-6	Chlorobenzotrifluoride, 4-	-	-	-	-	-	-	-	-
75-45-6	Chlorodifluoromethane (HC	-	-	-	-	-	-	-	-
67-66-3	Chloroform	-	-	-	-	-	-	-	-
107-30-2	Chloromethyl Methyl Ether	-	-	-	-	-	-	-	-
88-73-3	Chloronitrobenzene, o-	-	-	-	-	-	-	-	-
100-00-5	Chloronitrobenzene, p-	-	-	-	-	-	-	-	-
76-06-2	Chloropicrin	-	-	-	-	-	-	-	-
126-99-8	Chloroprene	-	-	-	-	-	-	-	-
1333-82-0	Chromic acid mists and diss	-	-	-	-	-	-	-	-
7440-47-3	Chromium	-	-	-	-	-	-	-	-
18540-29-9	Chromium (Hexavalent)	-	-	-	-	-	-	-	-
18540-29-9-p	Chromium (Hexavalent) - P	-	-	-	-	-	-	-	-
CHROM-COM	Chromium Compounds	-	-	-	-	-	-	-	-
16065-83-1	Chromium(III) Compounds	-	-	-	-	-	-	-	-
218-01-9	Chrysene (Benzo(a)phenan	-	-	-	-	-	-	-	-
87-29-6	Cinnamyl anthranilate	-	-	-	-	-	-	-	-
10061-01-5	cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-
8007-45-2	Coal Tar	-	-	-	-	-	-	-	-
7440-48-4	Cobalt	-	-	-	-	-	-	-	-
0-00-7	Coke Oven Emissions	-	-	-	-	-	-	-	-
7440-50-8	Copper	-	-	-	-	-	-	-	-
COPPER-CO	Copper Compounds	-	-	-	-	-	-	-	-
120-71-8	Cresidine, p-	-	-	-	-	-	-	-	-
108-39-4	Cresol, m-	-	-	-	-	-	-	-	-
95-48-7	Cresol, o-	-	-	-	-	-	-	-	-
106-44-5	Cresol, p-	-	-	-	-	-	-	-	-
1319-77-3	Cresols/Cresylic acid (isome	-	-	-	-	-	-	-	-
98-82-8	Cumene	-	-	-	-	-	-	-	-
135-20-6	Cupferron	-	-	-	-	-	-	-	-
57-12-5	Cyanide (Cyanide ion, Inorg	-	-	-	-	-	-	-	-
CYANIDE-CO	Cyanide Compounds	-	-	-	-	-	-	-	-
110-82-7	Cyclohexane	-	-	-	-	-	-	-	-
108-94-1	Cyclohexanone	-	-	-	-	-	-	-	-
27208-37-3	Cyclopenta[c,d]pyrene	-	-	-	-	-	-	-	-
50-29-3	DDT	-	-	-	-	-	-	-	-
615-05-4	Diaminoanisole, 2,4-	-	-	-	-	-	-	-	-
101-80-4	Diaminodiphenyl ether, 4,4-	-	-	-	-	-	-	-	-
103-33-3	Diazene, Diphenyl	-	-	-	-	-	-	-	-
226-36-8	Dibenz(a,h)acridine	-	-	-	-	-	-	-	-
224-42-0	Dibenz(a,j)acridine	-	-	-	-	-	-	-	-
53-70-3	Dibenz[a,h]anthracene	-	-	-	-	-	-	-	-
192-65-4	Dibenzo(a,e)pyrene	-	-	-	-	-	-	-	-
189-64-0	Dibenzo(a,h)pyrene	-	-	-	-	-	-	-	-
191-30-0	Dibenzo(a,l)pyrene	-	-	-	-	-	-	-	-
194-59-2	Dibenzo(c,g)carbazole, 7H-	-	-	-	-	-	-	-	-
5385-75-1	Dibenzo[a,e]fluoranthene	-	-	-	-	-	-	-	-
189-55-9	Dibenzo[a,i]pyrene	-	-	-	-	-	-	-	-
96-12-8	Dibromo-3-chloropropane, 1	-	-	-	-	-	-	-	-
764-41-0	Dichloro-2-butene, 1,4-	-	-	-	-	-	-	-	-
1476-11-5	Dichloro-2-butene, cis-1,4-	-	-	-	-	-	-	-	-
106-46-7	Dichlorobenzene(p), 1,4-	-	-	-	-	-	-	-	-
25321-22-6	Dichlorobenzenes	-	-	-	-	-	-	-	-
91-94-1	Dichlorobenzidene, 3,3-	-	-	-	-	-	-	-	-
75-71-8	Dichlorodifluoromethane (C	-	-	-	-	-	-	-	-
75-35-4	Dichloroethylene (1,1-) (Vin	-	-	-	-	-	-	-	-
156-60-5	Dichloroethylene, trans-1,2-	-	-	-	-	-	-	-	-
542-75-6	Dichloropropene, 1,3-	-	-	-	-	-	-	-	-
78-88-6	Dichloropropene, 2,3-	-	-	-	-	-	-	-	-
62-73-7	Dichlorvos	-	-	-	-	-	-	-	-
77-73-6	Dicyclopentadiene	-	-	-	-	-	-	-	-
60-57-1	Dieldrin	-	-	-	-	-	-	-	-
0-02-4	Diesel exhaust particulate	-	-	-	-	-	-	-	-
111-42-2	Diethanolamine	-	-	-	-	-	-	-	-
112-34-5	Diethylene Glycol Monobuty	-	-	-	-	-	-	-	-
111-90-0	Diethylene Glycol Monoethy	-	-	-	-	-	-	-	-
75-37-6	Difluoroethane, 1,1-	-	-	-	-	-	-	-	-
108-20-3	Diisopropyl Ether	-	-	-	-	-	-	-	-
60-11-7	Dimethyl aminoazobenzene	-	-	-	-	-	-	-	-
68-12-2	Dimethyl formamide	-	-	-	-	-	-	-	-
108-01-0	Dimethylamino ethanol, 2-	-	-	-	-	-	-	-	-
57-97-6	Dimethylbenz[a]anthracene,	-	-	-	-	-	-	-	-
57-14-7	Dimethylhydrazine, 1,1-	-	-	-	-	-	-	-	-
42397-64-8	Dinitropyrene, 1,6- (BaP)	-	-	-	-	-	-	-	-
42397-65-9	Dinitropyrene, 1,8- (BaP)	-	-	-	-	-	-	-	-
121-14-2	Dinitrotoluene, 2,4-	-	-	-	-	-	-	-	-
123-91-1	Dioxane, 1,4- (1,4-Diethylen	-	-	-	-	-	-	-	-
122-66-7	Diphenylhydrazine, 1,2-	-	-	-	-	-	-	-	-
106-89-8	Epichlorohydrin (l-Chloro-2,	-	-	-	-	-	-	-	-
106-88-7	Epoxybutane, 1,2-	-	-	-	-	-	-	-	-
110-80-5	Ethoxyethanol, 2- (ethylene	-	-	-	-	-	-	-	-
141-78-6	Ethyl acetate	-	-	-	-	-	-	-	-
140-88-5	Ethyl Acrylate	-	-	-	-	-	-	-	-
100-41-4	Ethyl benzene	-	-	-	-	-	-	-	-
51-79-6	Ethyl carbamate (Urethane)	-	-	-	-	-	-	-	-

75-00-3	Ethyl chloride (Chloroethane	-	-	-	-	-	-	-	-
97-63-2	Ethyl Methacrylate	-	-	-	-	-	-	-	-
106-93-4	Ethylene dibromide (Dibrom	-	-	-	-	-	-	-	-
107-06-2	Ethylene dichloride (1,2-Dic	-	-	-	-	-	-	-	-
107-21-1	Ethylene glycol	-	-	-	-	-	-	-	-
75-21-8	Ethylene oxide	-	-	-	-	-	-	-	-
96-45-7	Ethylene thiourea	-	-	-	-	-	-	-	-
75-34-3	Ethylidene dichloride (1,1-D	-	-	-	-	-	-	-	-
206-44-0	Fluoranthene	-	-	-	-	-	-	-	-
FLUORIDES	Fluorides (except hydrogen	-	-	-	-	-	-	-	-
50-00-0	Formaldehyde	-	-	-	-	-	-	-	-
64-18-6	Formic Acid	-	-	-	-	-	-	-	-
111-30-8	Glutaraldehyde	-	-	-	-	-	-	-	-
0-01-2	Glycol ethers	-	-	-	-	-	-	-	-
76-44-8	Heptachlor	-	-	-	-	-	-	-	-
1024-57-3	Heptachlor epoxide	-	-	-	-	-	-	-	-
35822-46-9	Heptachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-5	Heptachlorodibenzodioxin,	-	-	-	-	-	-	-	-
67562-39-4	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
55673-89-7	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
00-08-4	Heptachlorodibenzofuran, A	-	-	-	-	-	-	-	-
142-82-5	Heptane, N	-	-	-	-	-	-	-	-
118-74-1	Hexachlorobenzene	-	-	-	-	-	-	-	-
87-68-3	Hexachlorobutadiene	-	-	-	-	-	-	-	-
608-73-1	Hexachlorocyclohexane (tec	-	-	-	-	-	-	-	-
319-84-6	Hexachlorocyclohexane, alp	-	-	-	-	-	-	-	-
319-85-7	Hexachlorocyclohexane, be	-	-	-	-	-	-	-	-
77-47-4	Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-
39227-28-6	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
57653-85-7	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
19408-74-3	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-3	Hexachlorodibenzodioxins,	-	-	-	-	-	-	-	-
70648-26-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
57117-44-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
72918-21-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
60851-34-5	Hexachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-
00-08-2	Hexachlorodibenzofurans, A	-	-	-	-	-	-	-	-
67-72-1	Hexachloroethane	-	-	-	-	-	-	-	-
822-06-0	Hexamethylene-1,6-diisocya	-	-	-	-	-	-	-	-
110-54-3	Hexane	-	-	-	-	-	-	-	-
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl	-	-	-	-	-	-	-	-
591-78-6	Hexanone-2	-	-	-	-	-	-	-	-
302-01-2	Hydrazine	-	-	-	-	-	-	-	-
10034-93-2	Hydrazine sulfate	-	-	-	-	-	-	-	-
7647-01-0	Hydrochloric acid (hydrogen	-	-	-	-	-	-	-	-
74-90-8	Hydrogen cyanide	-	-	-	-	-	-	-	-
7664-39-3	Hydrogen fluoride (Hydroflu	-	-	-	-	-	-	-	-
7783-07-5	Hydrogen selenide	-	-	-	-	-	-	-	-
7783-06-4	Hydrogen sulfide	-	-	-	-	-	-	-	-
193-39-5	Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-
5888-33-5	Isobornyl acrylate	-	-	-	-	-	-	-	-
78-59-1	Isophorone	-	-	-	-	-	-	-	-
67-63-0	Isopropyl alcohol	-	-	-	-	-	-	-	-
7439-92-1	Lead	-	-	-	-	-	-	-	-
7758-97-6	Lead Chromate	-	-	-	-	-	-	-	-
LEAD-COMP	Lead Compounds	-	-	-	-	-	-	-	-
58-89-9	Lindane (all isomers)	-	-	-	-	-	-	-	-
108-31-6	Maleic anhydride	-	-	-	-	-	-	-	-
7439-96-5	Manganese	-	-	-	-	-	-	-	-
MANGANESE	Manganese Compounds	-	-	-	-	-	-	-	-
7439-97-6	Mercury (elemental)	-	-	-	-	-	-	-	-
MERCURY-C	Mercury Compounds	-	-	-	-	-	-	-	-
126-98-7	Methacrylonitrile	-	-	-	-	-	-	-	-
67-56-1	Methanol	-	-	-	-	-	-	-	-
109-86-4	Methoxyethanol, 2- (ethylen	-	-	-	-	-	-	-	-
96-33-3	Methyl acrylate	-	-	-	-	-	-	-	-
110-49-6	Methyl Cellosolve Acetate	-	-	-	-	-	-	-	-
74-87-3	Methyl chloride (Chlorometh	-	-	-	-	-	-	-	-
71-55-6	Methyl chloroform (1,1,1-Tri	-	-	-	-	-	-	-	-
78-93-3	Methyl ethyl ketone (2-Buta	-	-	-	-	-	-	-	-
60-34-4	Methyl Hydrazine	-	-	-	-	-	-	-	-
108-10-1	Methyl isobutyl ketone (Hex	-	-	-	-	-	-	-	-
624-83-9	Methyl isocyanate	-	-	-	-	-	-	-	-
80-62-6	Methyl methacrylate	-	-	-	-	-	-	-	-
1634-04-4	Methyl tert butyl ether	-	-	-	-	-	-	-	-
56-49-5	Methylcholanthrene, 3-	-	-	-	-	-	-	-	-
3697-24-3	Methylchrysene, 5-	-	-	-	-	-	-	-	-
101-14-4	Methylene bis(2-chloroanilin	-	-	-	-	-	-	-	-
74-95-3	Methylene Bromide	-	-	-	-	-	-	-	-
75-09-2	Methylene chloride (Dichlor	-	-	-	-	-	-	-	-
101-68-8	Methylene diphenyl diisocya	-	-	-	-	-	-	-	-
101-77-9	Methylenedianiline, 4,4-	-	-	-	-	-	-	-	-
90-94-8	Michler's ketone	-	-	-	-	-	-	-	-
10595-95-6	N- Nitrosomethylethylamine	-	-	-	-	-	-	-	-
924-16-3	N-Nitrosodi-n-butylamine	-	-	-	-	-	-	-	-
621-64-7	N-Nitrosodi-n-propylamine	-	-	-	-	-	-	-	-
55-18-5	N-Nitrosodiethylamine	-	-	-	-	-	-	-	-
62-75-9	N-Nitrosodimethylamine	-	-	-	-	-	-	-	-
86-30-6	N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-
59-89-2	N-Nitrosomorpholine	-	-	-	-	-	-	-	-
100-75-4	N-Nitrosopiperidine	-	-	-	-	-	-	-	-

111-84-2	N-Nonane	-	-	-	-	-	-	-	-
64724-95-6	Naphtha, High Flash Aroma	-	-	-	-	-	-	-	-
91-20-3	Naphthalene	-	-	-	-	-	-	-	-
193-09-9	Naphtho[2,3-e]pyrene	-	-	-	-	-	-	-	-
7440-02-0	Nickel	-	-	-	-	-	-	-	-
NICKEL-COM	Nickel Compounds	-	-	-	-	-	-	-	-
1313-99-1	Nickel oxide	-	-	-	-	-	-	-	-
0-02-5	Nickel refinery dust from the	-	-	-	-	-	-	-	-
12035-72-2	Nickel sulfide (NI3S2)	-	-	-	-	-	-	-	-
7697-37-2	Nitric acid	-	-	-	-	-	-	-	-
139-13-9	Nitrilotriacetic acid	-	-	-	-	-	-	-	-
18662-53-8	Nitrilotriacetic acid, trisodiu	-	-	-	-	-	-	-	-
602-87-9	Nitroacenaphthene, 5-	-	-	-	-	-	-	-	-
88-74-4	Nitroaniline, 2-	-	-	-	-	-	-	-	-
100-01-6	Nitroaniline, 4-	-	-	-	-	-	-	-	-
98-95-3	Nitrobenzene	-	-	-	-	-	-	-	-
7496-02-8	Nitrochrysene, 6-	-	-	-	-	-	-	-	-
607-57-8	Nitrofluorene, 2-	-	-	-	-	-	-	-	-
10102-44-0	Nitrogen dioxide (NO2)	-	-	-	-	-	-	-	-
75-52-5	Nitromethane	-	-	-	-	-	-	-	-
79-46-9	Nitropropane, 2-	-	-	-	-	-	-	-	-
5522-43-0	Nitropyrene, 1-	-	-	-	-	-	-	-	-
57835-92-4	Nitropyrene, 4-	-	-	-	-	-	-	-	-
156-10-5	Nitrosodiphenylamine, p-	-	-	-	-	-	-	-	-
3268-87-9	Octachlorodibenzo-p-dioxin,	-	-	-	-	-	-	-	-
39001-02-0	Octachlorodibenzofuran, 1,2	-	-	-	-	-	-	-	-
10028-15-6	Ozone	-	-	-	-	-	-	-	-
74472-37-0	PCB 114 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
31508-00-6	PCB 118 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
65510-44-3	PCB 123 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
57465-28-8	PCB 126 (3,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
38380-0804	PCB 156 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Hep	-	-	-	-	-	-	-	-
32598-13-3	PCB 77 (3,3,4,4-Tetrachloro	-	-	-	-	-	-	-	-
70362-50-4	PCB 81 (3,4,4,5 Tetrachloro	-	-	-	-	-	-	-	-
32598-14-4	PCB105 (2,3,3,4,4 Pentachl	-	-	-	-	-	-	-	-
40321-76-4	Pentachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-1	Pentachlorodibenzodioxins,	-	-	-	-	-	-	-	-
57117-41-6	Pentachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
57117-31-4	Pentachlorodibenzofuran, 2	-	-	-	-	-	-	-	-
00-09-0	Pentachlorodibenzofurans,	-	-	-	-	-	-	-	-
87-86-5	Pentachlorophenol	-	-	-	-	-	-	-	-
109-66-0	Pentane, n-	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
85-01-8	Phenanthrene	-	-	-	-	-	-	-	-
108-95-2	Phenol	-	-	-	-	-	-	-	-
75-44-5	Phosgene	-	-	-	-	-	-	-	-
7803-51-2	Phosphine	-	-	-	-	-	-	-	-
7664-38-2	Phosphoric acid	-	-	-	-	-	-	-	-
85-44-9	Phthalic anhydride	-	-	-	-	-	-	-	-
59536-65-1	Polybrominated Biphenyls	-	-	-	-	-	-	-	-
1336-36-3	Polychlorinated biphenyls (A	-	-	-	-	-	-	-	-
00-08-0	Polychlorinated Dibenzo-P-	-	-	-	-	-	-	-	-
00-05-0	Polychlorinated Dibenzodio	-	-	-	-	-	-	-	-
00-05-1	Polychlorinated Dibenzofura	-	-	-	-	-	-	-	-
130498-29-2	Polycyclic Aromatic Hydroca	-	-	-	-	-	-	-	-
00-01-7	Polycyclic Organic Matter (P	-	-	-	-	-	-	-	-
9016-87-9	Polymeric diphenylmethane	-	-	-	-	-	-	-	-
7758-01-2	Potassium bromate	-	-	-	-	-	-	-	-
1120-71-4	Propane sultone, 1,3-	-	-	-	-	-	-	-	-
57-57-8	Propiolactone, beta-	-	-	-	-	-	-	-	-
123-38-6	Propionaldehyde	-	-	-	-	-	-	-	-
115-07-1	Propylene	-	-	-	-	-	-	-	-
78-87-5	Propylene dichloride (1,2-Di	-	-	-	-	-	-	-	-
107-98-2	Propylene Glycol Monometh	-	-	-	-	-	-	-	-
75-56-9	Propylene oxide	-	-	-	-	-	-	-	-
930-55-2	Pyrrolidine, 1-Nitroso-	-	-	-	-	-	-	-	-
7782-49-2	Selenium	-	-	-	-	-	-	-	-
0-01-9	Selenium Compounds	-	-	-	-	-	-	-	-
7631-86-9	Silica (crystalline, respirable	-	-	-	-	-	-	-	-
1310-73-2	Sodium hydroxide	-	-	-	-	-	-	-	-
10588-01-9	Sodium Dichromate	-	-	-	-	-	-	-	-
7789-06-2	Strontium chromate	-	-	-	-	-	-	-	-
100-42-5	Styrene	-	-	-	-	-	-	-	-
96-09-3	Styrene oxide	-	-	-	-	-	-	-	-
14808-79-8	Sulfates	-	-	-	-	-	-	-	-
126-33-0	Sulfolane	-	-	-	-	-	-	-	-
7446-09-5	Sulfur dioxide	-	-	-	-	-	-	-	-
7664-93-9	Sulfuric acid (aerosol forms	-	-	-	-	-	-	-	-
8014-95-7	Sulfuric Acid mixture w. sulf	-	-	-	-	-	-	-	-
00-09-1	TCDD Eqivalents, 2,3,7,8-	-	-	-	-	-	-	-	-
540-88-5	Tert-Butyl Acetate	-	-	-	-	-	-	-	-
1746-01-6	Tetrachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-8	Tetrachlorodibenzodioxins,	-	-	-	-	-	-	-	-
51207-31-9	Tetrachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-

00-08-6	Tetrachlorodibenzofurans, A	-	-	-	-	-	-	-	-
630-20-6	Tetrachloroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
79-34-5	Tetrachloroethane, 1,1,2,2-	-	-	-	-	-	-	-	-
127-18-4	Tetrachloroethylene (Perchl	-	-	-	-	-	-	-	-
811-97-2	Tetrafluoroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
109-99-9	Tetrahydrofuran	-	-	-	-	-	-	-	-
62-55-5	Thioacetamide	-	-	-	-	-	-	-	-
62-56-6	Thiourea	-	-	-	-	-	-	-	-
108-88-3	Toluene	-	-	-	-	-	-	-	-
584-84-9	Toluene-2,4-diisocyanate	-	-	-	-	-	-	-	-
91-08-7	Toluene-2,6-diisocyanate	-	-	-	-	-	-	-	-
95-80-7	Toluene diamine, 2,4-	-	-	-	-	-	-	-	-
26471-62-5	Toluenediisocyanate (mixed	-	-	-	-	-	-	-	-
95-53-4	Toluidine, o- (Methylaniline,	-	-	-	-	-	-	-	-
8001-35-2	Toxaphene (chlorinated ca	-	-	-	-	-	-	-	-
10061-02-6	trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-
120-82-1	Trichlorobenzene, 1,2,4-	-	-	-	-	-	-	-	-
79-00-5	Trichloroethane, 1,1,2-	-	-	-	-	-	-	-	-
79-01-6	Trichloroethylene (TCE)	-	-	-	-	-	-	-	-
75-69-4	Trichlorofluoromethane (CF	-	-	-	-	-	-	-	-
88-06-2	Trichlorophenol, 2,4,6-	-	-	-	-	-	-	-	-
96-18-4	Trichloropropane, 1,2,3-	-	-	-	-	-	-	-	-
96-19-5	Trichloropropene, 1,2,3-	-	-	-	-	-	-	-	-
76-13-1	Trichlorotrifluoroethane, 1,1	-	-	-	-	-	-	-	-
121-44-8	Triethylamine	-	-	-	-	-	-	-	-
420-46-2	Trifluoroethane, 1,1,1-	-	-	-	-	-	-	-	-
526-73-8	Trimethylbenzene, 1,2,3-	-	-	-	-	-	-	-	-
95-63-6	Trimethylbenzene, 1,2,4-	-	-	-	-	-	-	-	-
108-67-8	Trimethylbenzene, 1,3,5-	-	-	-	-	-	-	-	-
URANIUM-SO	Uranium (Soluble Salts)	-	-	-	-	-	-	-	-
7440-61-1	Uranium, Insoluble Compou	-	-	-	-	-	-	-	-
7440-62-2	Vanadium and Compounds	-	-	-	-	-	-	-	-
1314-62-1	Vanadium Pentoxide, (V2O	-	-	-	-	-	-	-	-
108-05-4	Vinyl acetate	-	-	-	-	-	-	-	-
593-60-2	Vinyl bromide	-	-	-	-	-	-	-	-
75-01-4	Vinyl chloride	-	-	-	-	-	-	-	-
1330-20-7	Xylenes	-	-	-	-	-	-	-	-
108-38-3	Xylenes, m-	-	-	-	-	-	-	-	-
95-47-6	Xylenes, o-	-	-	-	-	-	-	-	-
106-42-3	Xylenes, p-	-	-	-	-	-	-	-	-
13530-65-9	Zinc chromate	-	-	-	-	-	-	-	-

RASS version: 2020-12

No inputs needed on this page

Air Concentrations in ug/m3

		Stack #12				Stack #13			
CAS# or MPCA#	**Chemical Name**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**
202-94-8	11H-Benz[b,c]aceanthrylene	-	-	-	-	-	-	-	-
202-98-2	4H-Cyclopenta[d,e,f]chrysen	-	-	-	-	-	-	-	-
75-07-0	Acetaldehyde	-	-	-	-	-	-	-	-
60-35-5	Acetamide	-	-	-	-	-	-	-	-
67-64-1	Acetone	-	-	-	-	-	-	-	-
75-86-5	Acetone Cyanohydrin	-	-	-	-	-	-	-	-
75-05-8	Acetonitrile	-	-	-	-	-	-	-	-
53-96-3	Acetylaminofluorene, 2-	-	-	-	-	-	-	-	-
107-02-8	Acrolein	-	-	-	-	-	-	-	-
79-06-1	Acrylamide	-	-	-	-	-	-	-	-
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-	-	-	-	-	-	-	-	-
79-10-7	Acrylic acid	-	-	-	-	-	-	-	-
107-13-1	Acrylonitrile	-	-	-	-	-	-	-	-
111-69-3	Adiponitrile	-	-	-	-	-	-	-	-
ALDEHYDES	Aldehydes	-	-	-	-	-	-	-	-
309-00-2	Aldrin	-	-	-	-	-	-	-	-
ALIPHATIC-M	Aliphatic Hydrocarbon Strea	-	-	-	-	-	-	-	-
107-05-1	Allyl chloride	-	-	-	-	-	-	-	-
7429-90-5	Aluminum	-	-	-	-	-	-	-	-
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3	-	-	-	-	-	-	-	-
6109-97-3	Amino-9-ethylcarbazolehydr	-	-	-	-	-	-	-	-
117-79-3	Aminoanthraquinone, 2-	-	-	-	-	-	-	-	-
7664-41-7	Ammonia	-	-	-	-	-	-	-	-
62-53-3	Aniline	-	-	-	-	-	-	-	-
191-26-4	Anthanthrene	-	-	-	-	-	-	-	-
7440-36-0	Antimony	-	-	-	-	-	-	-	-
ANTIMONY-C	Antimony Compounds	-	-	-	-	-	-	-	-
1309-64-4	Antimony trioxide	-	-	-	-	-	-	-	-
140-57-8	Aramite	-	-	-	-	-	-	-	-
7440-38-2	Arsenic	-	-	-	-	-	-	-	-
ARSENIC-CO	Arsenic Compounds	-	-	-	-	-	-	-	-
1327-53-3	Arsenic Trioxide	-	-	-	-	-	-	-	-
7784-42-1	Arsine	-	-	-	-	-	-	-	-
1332-21-4	Asbestos (units in fibers)	-	-	-	-	-	-	-	-
1332-21-4-LA	Asbestos, Libby Amphibole	-	-	-	-	-	-	-	-
123-77-3	Azodicarbonamide	-	-	-	-	-	-	-	-
10294-40-3	Barium Chromate	-	-	-	-	-	-	-	-
199-54-2	Benz[e]aceanthrylene	-	-	-	-	-	-	-	-
202-33-5	Benz[j]aceanthrylene	-	-	-	-	-	-	-	-
211-91-6	Benz[l]aceanthrylene	-	-	-	-	-	-	-	-
71-43-2	Benzene	-	-	-	-	-	-	-	-
92-87-5	Benzidine	-	-	-	-	-	-	-	-
205-82-3	Benzo(j)fluoranthene	-	-	-	-	-	-	-	-
207-08-9	Benzo(k)fluoranthene	-	-	-	-	-	-	-	-
56-55-3	Benzo[a]anthracene	-	-	-	-	-	-	-	-
50-32-8	Benzo[a]pyrene	-	-	-	-	-	-	-	-
205-99-2	Benzo[b]fluoranthene	-	-	-	-	-	-	-	-
205-12-9	Benzo[c]fluorene	-	-	-	-	-	-	-	-
191-24-2	Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-
65-85-0	Benzoic Acid	-	-	-	-	-	-	-	-
100-44-7	Benzyl chloride	-	-	-	-	-	-	-	-
7440-41-7	Beryllium	-	-	-	-	-	-	-	-
BERYLLIUM-	Beryllium Compounds	-	-	-	-	-	-	-	-
13510-49-1	Beryllium sulfate	-	-	-	-	-	-	-	-
111-44-4	Bis(2-chloroethyl)ether	-	-	-	-	-	-	-	-
117-81-7	Bis(2-ethylhexyl)phthalate (	-	-	-	-	-	-	-	-
542-88-1	Bis(chloromethyl)ether	-	-	-	-	-	-	-	-
7440-42-8	Boron And Borates Only	-	-	-	-	-	-	-	-
10294-34-5	Boron Trichloride	-	-	-	-	-	-	-	-
7637-07-2	Boron Trifluoride	-	-	-	-	-	-	-	-
108-86-1	Bromobenzene	-	-	-	-	-	-	-	-
74-97-5	Bromochloromethane	-	-	-	-	-	-	-	-
75-27-4	Bromodichloromethane	-	-	-	-	-	-	-	-
75-25-2	Bromoform	-	-	-	-	-	-	-	-
74-83-9	Bromomethane	-	-	-	-	-	-	-	-
106-94-5	Bromopropane, 1-	-	-	-	-	-	-	-	-
106-99-0	Butadiene, 1,3-	-	-	-	-	-	-	-	-
78-92-2	Butyl alcohol, sec-	-	-	-	-	-	-	-	-
111-76-2	Butyl Cellosolve (ethylene g	-	-	-	-	-	-	-	-
25013-16-5	Butylated hydroxyanisole	-	-	-	-	-	-	-	-
3068-88-0	Butyrolactone, beta-	-	-	-	-	-	-	-	-
7440-43-9	Cadmium	-	-	-	-	-	-	-	-
CADMIUM-CO	Cadmium Compounds	-	-	-	-	-	-	-	-
13765-19-0	Calcium Chromate	-	-	-	-	-	-	-	-
105-60-2	Caprolactum	-	-	-	-	-	-	-	-
75-15-0	Carbon disulfide	-	-	-	-	-	-	-	-
630-08-0	Carbon Monoxide	-	-	-	-	-	-	-	-
56-23-5	Carbon tetrachloride	-	-	-	-	-	-	-	-
463-58-1	Carbonyl sulfide	-	-	-	-	-	-	-	-
111-15-9	Cellosolve Acetate (ethylen	-	-	-	-	-	-	-	-
1306-38-3	Cerium Oxide and Cerium C	-	-	-	-	-	-	-	-
12789-03-6	Chlordane or (57-74-9)	-	-	-	-	-	-	-	-
115-28-6	Chlorendic acid	-	-	-	-	-	-	-	-
108171-26-2	Chlorinated Paraffins (C12,	-	-	-	-	-	-	-	-
7782-50-5	Chlorine	-	-	-	-	-	-	-	-

10049-04-4	Chlorine Oxide (CLO2)	-	-	-	-	-	-	-	-
75-68-3	Chloro-1,1-difluoroethane, 1	-	-	-	-	-	-	-	-
563-47-3	Chloro-2-methylpropene, 3-	-	-	-	-	-	-	-	-
95-83-0	Chloro-o-phenylenediamine	-	-	-	-	-	-	-	-
95-69-2	Chloro-o-toluidine, p-	-	-	-	-	-	-	-	-
532-27-4	Chloroacetophenone, 2-	-	-	-	-	-	-	-	-
108-90-7	Chlorobenzene	-	-	-	-	-	-	-	-
98-56-6	Chlorobenzotrifluoride, 4-	-	-	-	-	-	-	-	-
75-45-6	Chlorodifluoromethane (HC	-	-	-	-	-	-	-	-
67-66-3	Chloroform	-	-	-	-	-	-	-	-
107-30-2	Chloromethyl Methyl Ether	-	-	-	-	-	-	-	-
88-73-3	Chloronitrobenzene, o-	-	-	-	-	-	-	-	-
100-00-5	Chloronitrobenzene, p-	-	-	-	-	-	-	-	-
76-06-2	Chloropicrin	-	-	-	-	-	-	-	-
126-99-8	Chloroprene	-	-	-	-	-	-	-	-
1333-82-0	Chromic acid mists and diss	-	-	-	-	-	-	-	-
7440-47-3	Chromium	-	-	-	-	-	-	-	-
18540-29-9	Chromium (Hexavalent)	-	-	-	-	-	-	-	-
18540-29-9-p	Chromium (Hexavalent) - P	-	-	-	-	-	-	-	-
CHROM-COM	Chromium Compounds	-	-	-	-	-	-	-	-
16065-83-1	Chromium(III) Compounds	-	-	-	-	-	-	-	-
218-01-9	Chrysene (Benzo(a)phenan	-	-	-	-	-	-	-	-
87-29-6	Cinnamyl anthranilate	-	-	-	-	-	-	-	-
10061-01-5	cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-
8007-45-2	Coal Tar	-	-	-	-	-	-	-	-
7440-48-4	Cobalt	-	-	-	-	-	-	-	-
0-00-7	Coke Oven Emissions	-	-	-	-	-	-	-	-
7440-50-8	Copper	-	-	-	-	-	-	-	-
COPPER-CO	Copper Compounds	-	-	-	-	-	-	-	-
120-71-8	Cresidine, p-	-	-	-	-	-	-	-	-
108-39-4	Cresol, m-	-	-	-	-	-	-	-	-
95-48-7	Cresol, o-	-	-	-	-	-	-	-	-
106-44-5	Cresol, p-	-	-	-	-	-	-	-	-
1319-77-3	Cresols/Cresylic acid (isome	-	-	-	-	-	-	-	-
98-82-8	Cumene	-	-	-	-	-	-	-	-
135-20-6	Cupferron	-	-	-	-	-	-	-	-
57-12-5	Cyanide (Cyanide ion, Inorg	-	-	-	-	-	-	-	-
CYANIDE-CO	Cyanide Compounds	-	-	-	-	-	-	-	-
110-82-7	Cyclohexane	-	-	-	-	-	-	-	-
108-94-1	Cyclohexanone	-	-	-	-	-	-	-	-
27208-37-3	Cyclopenta[c,d]pyrene	-	-	-	-	-	-	-	-
50-29-3	DDT	-	-	-	-	-	-	-	-
615-05-4	Diaminoanisole, 2,4-	-	-	-	-	-	-	-	-
101-80-4	Diaminodiphenyl ether, 4,4-	-	-	-	-	-	-	-	-
103-33-3	Diazene, Diphenyl	-	-	-	-	-	-	-	-
226-36-8	Dibenz(a,h)acridine	-	-	-	-	-	-	-	-
224-42-0	Dibenz(a,j)acridine	-	-	-	-	-	-	-	-
53-70-3	Dibenz[a,h]anthracene	-	-	-	-	-	-	-	-
192-65-4	Dibenzo(a,e)pyrene	-	-	-	-	-	-	-	-
189-64-0	Dibenzo(a,h)pyrene	-	-	-	-	-	-	-	-
191-30-0	Dibenzo(a,l)pyrene	-	-	-	-	-	-	-	-
194-59-2	Dibenzo(c,g)carbazole, 7H-	-	-	-	-	-	-	-	-
5385-75-1	Dibenzo[a,e]fluoranthene	-	-	-	-	-	-	-	-
189-55-9	Dibenzo[a,i]pyrene	-	-	-	-	-	-	-	-
96-12-8	Dibromo-3-chloropropane, 1	-	-	-	-	-	-	-	-
764-41-0	Dichloro-2-butene, 1,4-	-	-	-	-	-	-	-	-
1476-11-5	Dichloro-2-butene, cis-1,4-	-	-	-	-	-	-	-	-
106-46-7	Dichlorobenzene(p), 1,4-	-	-	-	-	-	-	-	-
25321-22-6	Dichlorobenzenes	-	-	-	-	-	-	-	-
91-94-1	Dichlorobenzidene, 3,3-	-	-	-	-	-	-	-	-
75-71-8	Dichlorodifluoromethane (C	-	-	-	-	-	-	-	-
75-35-4	Dichloroethylene (1,1-) (Vin	-	-	-	-	-	-	-	-
156-60-5	Dichloroethylene, trans-1,2-	-	-	-	-	-	-	-	-
542-75-6	Dichloropropene, 1,3-	-	-	-	-	-	-	-	-
78-88-6	Dichloropropene, 2,3-	-	-	-	-	-	-	-	-
62-73-7	Dichlorvos	-	-	-	-	-	-	-	-
77-73-6	Dicyclopentadiene	-	-	-	-	-	-	-	-
60-57-1	Dieldrin	-	-	-	-	-	-	-	-
0-02-4	Diesel exhaust particulate	-	-	-	-	-	-	-	-
111-42-2	Diethanolamine	-	-	-	-	-	-	-	-
112-34-5	Diethylene Glycol Monobuty	-	-	-	-	-	-	-	-
111-90-0	Diethylene Glycol Monoethy	-	-	-	-	-	-	-	-
75-37-6	Difluoroethane, 1,1-	-	-	-	-	-	-	-	-
108-20-3	Diisopropyl Ether	-	-	-	-	-	-	-	-
60-11-7	Dimethyl aminoazobenzene	-	-	-	-	-	-	-	-
68-12-2	Dimethyl formamide	-	-	-	-	-	-	-	-
108-01-0	Dimethylamino ethanol, 2-	-	-	-	-	-	-	-	-
57-97-6	Dimethylbenz[a]anthracene,	-	-	-	-	-	-	-	-
57-14-7	Dimethylhydrazine, 1,1-	-	-	-	-	-	-	-	-
42397-64-8	Dinitropyrene, 1,6- (BaP)	-	-	-	-	-	-	-	-
42397-65-9	Dinitropyrene, 1,8- (BaP)	-	-	-	-	-	-	-	-
121-14-2	Dinitrotoluene, 2,4-	-	-	-	-	-	-	-	-
123-91-1	Dioxane, 1,4- (1,4-Diethylen	-	-	-	-	-	-	-	-
122-66-7	Diphenylhydrazine, 1,2-	-	-	-	-	-	-	-	-
106-89-8	Epichlorohydrin (l-Chloro-2,	-	-	-	-	-	-	-	-
106-88-7	Epoxybutane, 1,2-	-	-	-	-	-	-	-	-
110-80-5	Ethoxyethanol, 2- (ethylene	-	-	-	-	-	-	-	-
141-78-6	Ethyl acetate	-	-	-	-	-	-	-	-
140-88-5	Ethyl Acrylate	-	-	-	-	-	-	-	-
100-41-4	Ethyl benzene	-	-	-	-	-	-	-	-
51-79-6	Ethyl carbamate (Urethane)	-	-	-	-	-	-	-	-

75-00-3	Ethyl chloride (Chloroethane	-	-	-	-	-	-	-	-
97-63-2	Ethyl Methacrylate	-	-	-	-	-	-	-	-
106-93-4	Ethylene dibromide (Dibrom	-	-	-	-	-	-	-	-
107-06-2	Ethylene dichloride (1,2-Dic	-	-	-	-	-	-	-	-
107-21-1	Ethylene glycol	-	-	-	-	-	-	-	-
75-21-8	Ethylene oxide	-	-	-	-	-	-	-	-
96-45-7	Ethylene thiourea	-	-	-	-	-	-	-	-
75-34-3	Ethylidene dichloride (1,1-D	-	-	-	-	-	-	-	-
206-44-0	Fluoranthene	-	-	-	-	-	-	-	-
FLUORIDES	Fluorides (except hydrogen	-	-	-	-	-	-	-	-
50-00-0	Formaldehyde	-	-	-	-	-	-	-	-
64-18-6	Formic Acid	-	-	-	-	-	-	-	-
111-30-8	Glutaraldehyde	-	-	-	-	-	-	-	-
0-01-2	Glycol ethers	-	-	-	-	-	-	-	-
76-44-8	Heptachlor	-	-	-	-	-	-	-	-
1024-57-3	Heptachlor epoxide	-	-	-	-	-	-	-	-
35822-46-9	Heptachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-5	Heptachlorodibenzodioxin,	-	-	-	-	-	-	-	-
67562-39-4	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
55673-89-7	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
00-08-4	Heptachlorodibenzofuran, A	-	-	-	-	-	-	-	-
142-82-5	Heptane, N	-	-	-	-	-	-	-	-
118-74-1	Hexachlorobenzene	-	-	-	-	-	-	-	-
87-68-3	Hexachlorobutadiene	-	-	-	-	-	-	-	-
608-73-1	Hexachlorocyclohexane (tec	-	-	-	-	-	-	-	-
319-84-6	Hexachlorocyclohexane, alp	-	-	-	-	-	-	-	-
319-85-7	Hexachlorocyclohexane, be	-	-	-	-	-	-	-	-
77-47-4	Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-
39227-28-6	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
57653-85-7	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
19408-74-3	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-3	Hexachlorodibenzodioxins,	-	-	-	-	-	-	-	-
70648-26-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
57117-44-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
72918-21-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
60851-34-5	Hexachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-
00-08-2	Hexachlorodibenzofurans, A	-	-	-	-	-	-	-	-
67-72-1	Hexachloroethane	-	-	-	-	-	-	-	-
822-06-0	Hexamethylene-1,6-diisocya	-	-	-	-	-	-	-	-
110-54-3	Hexane	-	-	-	-	-	-	-	-
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl	-	-	-	-	-	-	-	-
591-78-6	Hexanone-2	-	-	-	-	-	-	-	-
302-01-2	Hydrazine	-	-	-	-	-	-	-	-
10034-93-2	Hydrazine sulfate	-	-	-	-	-	-	-	-
7647-01-0	Hydrochloric acid (hydrogen	-	-	-	-	-	-	-	-
74-90-8	Hydrogen cyanide	-	-	-	-	-	-	-	-
7664-39-3	Hydrogen fluoride (Hydroflu	-	-	-	-	-	-	-	-
7783-07-5	Hydrogen selenide	-	-	-	-	-	-	-	-
7783-06-4	Hydrogen sulfide	-	-	-	-	-	-	-	-
193-39-5	Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-
5888-33-5	Isobornyl acrylate	-	-	-	-	-	-	-	-
78-59-1	Isophorone	-	-	-	-	-	-	-	-
67-63-0	Isopropyl alcohol	-	-	-	-	-	-	-	-
7439-92-1	Lead	-	-	-	-	-	-	-	-
7758-97-6	Lead Chromate	-	-	-	-	-	-	-	-
LEAD-COMP	Lead Compounds	-	-	-	-	-	-	-	-
58-89-9	Lindane (all isomers)	-	-	-	-	-	-	-	-
108-31-6	Maleic anhydride	-	-	-	-	-	-	-	-
7439-96-5	Manganese	-	-	-	-	-	-	-	-
MANGANESE	Manganese Compounds	-	-	-	-	-	-	-	-
7439-97-6	Mercury (elemental)	-	-	-	-	-	-	-	-
MERCURY-C	Mercury Compounds	-	-	-	-	-	-	-	-
126-98-7	Methacrylonitrile	-	-	-	-	-	-	-	-
67-56-1	Methanol	-	-	-	-	-	-	-	-
109-86-4	Methoxyethanol, 2- (ethylen	-	-	-	-	-	-	-	-
96-33-3	Methyl acrylate	-	-	-	-	-	-	-	-
110-49-6	Methyl Cellosolve Acetate	-	-	-	-	-	-	-	-
74-87-3	Methyl chloride (Chlorometh	-	-	-	-	-	-	-	-
71-55-6	Methyl chloroform (1,1,1-Tri	-	-	-	-	-	-	-	-
78-93-3	Methyl ethyl ketone (2-Buta	-	-	-	-	-	-	-	-
60-34-4	Methyl Hydrazine	-	-	-	-	-	-	-	-
108-10-1	Methyl isobutyl ketone (Hex	-	-	-	-	-	-	-	-
624-83-9	Methyl isocyanate	-	-	-	-	-	-	-	-
80-62-6	Methyl methacrylate	-	-	-	-	-	-	-	-
1634-04-4	Methyl tert butyl ether	-	-	-	-	-	-	-	-
56-49-5	Methylcholanthrene, 3-	-	-	-	-	-	-	-	-
3697-24-3	Methylchrysene, 5-	-	-	-	-	-	-	-	-
101-14-4	Methylene bis(2-chloroanilin	-	-	-	-	-	-	-	-
74-95-3	Methylene Bromide	-	-	-	-	-	-	-	-
75-09-2	Methylene chloride (Dichlor	-	-	-	-	-	-	-	-
101-68-8	Methylene diphenyl diisocya	-	-	-	-	-	-	-	-
101-77-9	Methylenedianiline, 4,4-	-	-	-	-	-	-	-	-
90-94-8	Michler's ketone	-	-	-	-	-	-	-	-
10595-95-6	N- Nitrosomethylethylamine	-	-	-	-	-	-	-	-
924-16-3	N-Nitrosodi-n-butylamine	-	-	-	-	-	-	-	-
621-64-7	N-Nitrosodi-n-propylamine	-	-	-	-	-	-	-	-
55-18-5	N-Nitrosodiethylamine	-	-	-	-	-	-	-	-
62-75-9	N-Nitrosodimethylamine	-	-	-	-	-	-	-	-
86-30-6	N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-
59-89-2	N-Nitrosomorpholine	-	-	-	-	-	-	-	-
100-75-4	N-Nitrosopiperidine	-	-	-	-	-	-	-	-

111-84-2	N-Nonane	-	-	-	-	-	-	-	-
64724-95-6	Naphtha, High Flash Aroma	-	-	-	-	-	-	-	-
91-20-3	Naphthalene	-	-	-	-	-	-	-	-
193-09-9	Naphtho[2,3-e]pyrene	-	-	-	-	-	-	-	-
7440-02-0	Nickel	-	-	-	-	-	-	-	-
NICKEL-COM	Nickel Compounds	-	-	-	-	-	-	-	-
1313-99-1	Nickel oxide	-	-	-	-	-	-	-	-
0-02-5	Nickel refinery dust from the	-	-	-	-	-	-	-	-
12035-72-2	Nickel sulfide (NI3S2)	-	-	-	-	-	-	-	-
7697-37-2	Nitric acid	-	-	-	-	-	-	-	-
139-13-9	Nitrilotriacetic acid	-	-	-	-	-	-	-	-
18662-53-8	Nitrilotriacetic acid, trisodiu	-	-	-	-	-	-	-	-
602-87-9	Nitroacenaphthene, 5-	-	-	-	-	-	-	-	-
88-74-4	Nitroaniline, 2-	-	-	-	-	-	-	-	-
100-01-6	Nitroaniline, 4-	-	-	-	-	-	-	-	-
98-95-3	Nitrobenzene	-	-	-	-	-	-	-	-
7496-02-8	Nitrochrysene, 6-	-	-	-	-	-	-	-	-
607-57-8	Nitrofluorene, 2-	-	-	-	-	-	-	-	-
10102-44-0	Nitrogen dioxide (NO2)	-	-	-	-	-	-	-	-
75-52-5	Nitromethane	-	-	-	-	-	-	-	-
79-46-9	Nitropropane, 2-	-	-	-	-	-	-	-	-
5522-43-0	Nitropyrene, 1-	-	-	-	-	-	-	-	-
57835-92-4	Nitropyrene, 4-	-	-	-	-	-	-	-	-
156-10-5	Nitrosodiphenylamine, p-	-	-	-	-	-	-	-	-
3268-87-9	Octachlorodibenzo-p-dioxin,	-	-	-	-	-	-	-	-
39001-02-0	Octachlorodibenzofuran, 1,2	-	-	-	-	-	-	-	-
10028-15-6	Ozone	-	-	-	-	-	-	-	-
74472-37-0	PCB 114 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
31508-00-6	PCB 118 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
65510-44-3	PCB 123 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
57465-28-8	PCB 126 (3,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
38380-0804	PCB 156 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Hep	-	-	-	-	-	-	-	-
32598-13-3	PCB 77 (3,3,4,4-Tetrachloro	-	-	-	-	-	-	-	-
70362-50-4	PCB 81 (3,4,4,5 Tetrachloro	-	-	-	-	-	-	-	-
32598-14-4	PCB105 (2,3,3,4,4 Pentachl	-	-	-	-	-	-	-	-
40321-76-4	Pentachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-1	Pentachlorodibenzodioxins,	-	-	-	-	-	-	-	-
57117-41-6	Pentachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
57117-31-4	Pentachlorodibenzofuran, 2	-	-	-	-	-	-	-	-
00-09-0	Pentachlorodibenzofurans,	-	-	-	-	-	-	-	-
87-86-5	Pentachlorophenol	-	-	-	-	-	-	-	-
109-66-0	Pentane, n-	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
85-01-8	Phenanthrene	-	-	-	-	-	-	-	-
108-95-2	Phenol	-	-	-	-	-	-	-	-
75-44-5	Phosgene	-	-	-	-	-	-	-	-
7803-51-2	Phosphine	-	-	-	-	-	-	-	-
7664-38-2	Phosphoric acid	-	-	-	-	-	-	-	-
85-44-9	Phthalic anhydride	-	-	-	-	-	-	-	-
59536-65-1	Polybrominated Biphenyls	-	-	-	-	-	-	-	-
1336-36-3	Polychlorinated biphenyls (A	-	-	-	-	-	-	-	-
00-08-0	Polychlorinated Dibenzo-P-	-	-	-	-	-	-	-	-
00-05-0	Polychlorinated Dibenzodio	-	-	-	-	-	-	-	-
00-05-1	Polychlorinated Dibenzofura	-	-	-	-	-	-	-	-
130498-29-2	Polycyclic Aromatic Hydroca	-	-	-	-	-	-	-	-
00-01-7	Polycyclic Organic Matter (P	-	-	-	-	-	-	-	-
9016-87-9	Polymeric diphenylmethane	-	-	-	-	-	-	-	-
7758-01-2	Potassium bromate	-	-	-	-	-	-	-	-
1120-71-4	Propane sultone, 1,3-	-	-	-	-	-	-	-	-
57-57-8	Propiolactone, beta-	-	-	-	-	-	-	-	-
123-38-6	Propionaldehyde	-	-	-	-	-	-	-	-
115-07-1	Propylene	-	-	-	-	-	-	-	-
78-87-5	Propylene dichloride (1,2-Di	-	-	-	-	-	-	-	-
107-98-2	Propylene Glycol Monometh	-	-	-	-	-	-	-	-
75-56-9	Propylene oxide	-	-	-	-	-	-	-	-
930-55-2	Pyrrolidine, 1-Nitroso-	-	-	-	-	-	-	-	-
7782-49-2	Selenium	-	-	-	-	-	-	-	-
0-01-9	Selenium Compounds	-	-	-	-	-	-	-	-
7631-86-9	Silica (crystalline, respirable	-	-	-	-	-	-	-	-
1310-73-2	Sodium hydroxide	-	-	-	-	-	-	-	-
10588-01-9	Sodium Dichromate	-	-	-	-	-	-	-	-
7789-06-2	Strontium chromate	-	-	-	-	-	-	-	-
100-42-5	Styrene	-	-	-	-	-	-	-	-
96-09-3	Styrene oxide	-	-	-	-	-	-	-	-
14808-79-8	Sulfates	-	-	-	-	-	-	-	-
126-33-0	Sulfolane	-	-	-	-	-	-	-	-
7446-09-5	Sulfur dioxide	-	-	-	-	-	-	-	-
7664-93-9	Sulfuric acid (aerosol forms	-	-	-	-	-	-	-	-
8014-95-7	Sulfuric Acid mixture w. sulf	-	-	-	-	-	-	-	-
00-09-1	TCDD Eqivalents, 2,3,7,8-	-	-	-	-	-	-	-	-
540-88-5	Tert-Butyl Acetate	-	-	-	-	-	-	-	-
1746-01-6	Tetrachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-8	Tetrachlorodibenzodioxins,	-	-	-	-	-	-	-	-
51207-31-9	Tetrachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-

00-08-6	Tetrachlorodibenzofurans, A	-	-	-	-	-	-	-	-
630-20-6	Tetrachloroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
79-34-5	Tetrachloroethane, 1,1,2,2-	-	-	-	-	-	-	-	-
127-18-4	Tetrachloroethylene (Perchl	-	-	-	-	-	-	-	-
811-97-2	Tetrafluoroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
109-99-9	Tetrahydrofuran	-	-	-	-	-	-	-	-
62-55-5	Thioacetamide	-	-	-	-	-	-	-	-
62-56-6	Thiourea	-	-	-	-	-	-	-	-
108-88-3	Toluene	-	-	-	-	-	-	-	-
584-84-9	Toluene-2,4-diisocyanate	-	-	-	-	-	-	-	-
91-08-7	Toluene-2,6-diisocyanate	-	-	-	-	-	-	-	-
95-80-7	Toluene diamine, 2,4-	-	-	-	-	-	-	-	-
26471-62-5	Toluenediisocyanate (mixed	-	-	-	-	-	-	-	-
95-53-4	Toluidine, o- (Methylaniline,	-	-	-	-	-	-	-	-
8001-35-2	Toxaphene (chlorinated ca	-	-	-	-	-	-	-	-
10061-02-6	trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-
120-82-1	Trichlorobenzene, 1,2,4-	-	-	-	-	-	-	-	-
79-00-5	Trichloroethane, 1,1,2-	-	-	-	-	-	-	-	-
79-01-6	Trichloroethylene (TCE)	-	-	-	-	-	-	-	-
75-69-4	Trichlorofluoromethane (CF	-	-	-	-	-	-	-	-
88-06-2	Trichlorophenol, 2,4,6-	-	-	-	-	-	-	-	-
96-18-4	Trichloropropane, 1,2,3-	-	-	-	-	-	-	-	-
96-19-5	Trichloropropene, 1,2,3-	-	-	-	-	-	-	-	-
76-13-1	Trichlorotrifluoroethane, 1,1	-	-	-	-	-	-	-	-
121-44-8	Triethylamine	-	-	-	-	-	-	-	-
420-46-2	Trifluoroethane, 1,1,1-	-	-	-	-	-	-	-	-
526-73-8	Trimethylbenzene, 1,2,3-	-	-	-	-	-	-	-	-
95-63-6	Trimethylbenzene, 1,2,4-	-	-	-	-	-	-	-	-
108-67-8	Trimethylbenzene, 1,3,5-	-	-	-	-	-	-	-	-
URANIUM-SO	Uranium (Soluble Salts)	-	-	-	-	-	-	-	-
7440-61-1	Uranium, Insoluble Compou	-	-	-	-	-	-	-	-
7440-62-2	Vanadium and Compounds	-	-	-	-	-	-	-	-
1314-62-1	Vanadium Pentoxide, (V2O	-	-	-	-	-	-	-	-
108-05-4	Vinyl acetate	-	-	-	-	-	-	-	-
593-60-2	Vinyl bromide	-	-	-	-	-	-	-	-
75-01-4	Vinyl chloride	-	-	-	-	-	-	-	-
1330-20-7	Xylenes	-	-	-	-	-	-	-	-
108-38-3	Xylenes, m-	-	-	-	-	-	-	-	-
95-47-6	Xylenes, o-	-	-	-	-	-	-	-	-
106-42-3	Xylenes, p-	-	-	-	-	-	-	-	-
13530-65-9	Zinc chromate	-	-	-	-	-	-	-	-

RASS version: 2020-12

No inputs needed on this page

Air Concentrations in ug/m3

		Stack #14				Stack #15			
CAS# or MPCA#	**Chemical Name**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**
202-94-8	11H-Benz[b,c]aceanthrylene	-	-	-	-	-	-	-	-
202-98-2	4H-Cyclopenta[d,e,f]chrysen	-	-	-	-	-	-	-	-
75-07-0	Acetaldehyde	-	-	-	-	-	-	-	-
60-35-5	Acetamide	-	-	-	-	-	-	-	-
67-64-1	Acetone	-	-	-	-	-	-	-	-
75-86-5	Acetone Cyanohydrin	-	-	-	-	-	-	-	-
75-05-8	Acetonitrile	-	-	-	-	-	-	-	-
53-96-3	Acetylaminofluorene, 2-	-	-	-	-	-	-	-	-
107-02-8	Acrolein	-	-	-	-	-	-	-	-
79-06-1	Acrylamide	-	-	-	-	-	-	-	-
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-	-	-	-	-	-	-	-	-
79-10-7	Acrylic acid	-	-	-	-	-	-	-	-
107-13-1	Acrylonitrile	-	-	-	-	-	-	-	-
111-69-3	Adiponitrile	-	-	-	-	-	-	-	-
ALDEHYDES	Aldehydes	-	-	-	-	-	-	-	-
309-00-2	Aldrin	-	-	-	-	-	-	-	-
ALIPHATIC-M	Aliphatic Hydrocarbon Strea	-	-	-	-	-	-	-	-
107-05-1	Allyl chloride	-	-	-	-	-	-	-	-
7429-90-5	Aluminum	-	-	-	-	-	-	-	-
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3	-	-	-	-	-	-	-	-
6109-97-3	Amino-9-ethylcarbazolehydr	-	-	-	-	-	-	-	-
117-79-3	Aminoanthraquinone, 2-	-	-	-	-	-	-	-	-
7664-41-7	Ammonia	-	-	-	-	-	-	-	-
62-53-3	Aniline	-	-	-	-	-	-	-	-
191-26-4	Anthanthrene	-	-	-	-	-	-	-	-
7440-36-0	Antimony	-	-	-	-	-	-	-	-
ANTIMONY-C	Antimony Compounds	-	-	-	-	-	-	-	-
1309-64-4	Antimony trioxide	-	-	-	-	-	-	-	-
140-57-8	Aramite	-	-	-	-	-	-	-	-
7440-38-2	Arsenic	-	-	-	-	-	-	-	-
ARSENIC-CO	Arsenic Compounds	-	-	-	-	-	-	-	-
1327-53-3	Arsenic Trioxide	-	-	-	-	-	-	-	-
7784-42-1	Arsine	-	-	-	-	-	-	-	-
1332-21-4	Asbestos (units in fibers)	-	-	-	-	-	-	-	-
1332-21-4-LA	Asbestos, Libby Amphibole	-	-	-	-	-	-	-	-
123-77-3	Azodicarbonamide	-	-	-	-	-	-	-	-
10294-40-3	Barium Chromate	-	-	-	-	-	-	-	-
199-54-2	Benz[e]aceanthrylene	-	-	-	-	-	-	-	-
202-33-5	Benz[j]aceanthrylene	-	-	-	-	-	-	-	-
211-91-6	Benz[l]aceanthrylene	-	-	-	-	-	-	-	-
71-43-2	Benzene	-	-	-	-	-	-	-	-
92-87-5	Benzidine	-	-	-	-	-	-	-	-
205-82-3	Benzo(j)fluoranthene	-	-	-	-	-	-	-	-
207-08-9	Benzo(k)fluoranthene	-	-	-	-	-	-	-	-
56-55-3	Benzo[a]anthracene	-	-	-	-	-	-	-	-
50-32-8	Benzo[a]pyrene	-	-	-	-	-	-	-	-
205-99-2	Benzo[b]fluoranthene	-	-	-	-	-	-	-	-
205-12-9	Benzo[c]fluorene	-	-	-	-	-	-	-	-
191-24-2	Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-
65-85-0	Benzoic Acid	-	-	-	-	-	-	-	-
100-44-7	Benzyl chloride	-	-	-	-	-	-	-	-
7440-41-7	Beryllium	-	-	-	-	-	-	-	-
BERYLLIUM-	Beryllium Compounds	-	-	-	-	-	-	-	-
13510-49-1	Beryllium sulfate	-	-	-	-	-	-	-	-
111-44-4	Bis(2-chloroethyl)ether	-	-	-	-	-	-	-	-
117-81-7	Bis(2-ethylhexyl)phthalate (	-	-	-	-	-	-	-	-
542-88-1	Bis(chloromethyl)ether	-	-	-	-	-	-	-	-
7440-42-8	Boron And Borates Only	-	-	-	-	-	-	-	-
10294-34-5	Boron Trichloride	-	-	-	-	-	-	-	-
7637-07-2	Boron Trifluoride	-	-	-	-	-	-	-	-
108-86-1	Bromobenzene	-	-	-	-	-	-	-	-
74-97-5	Bromochloromethane	-	-	-	-	-	-	-	-
75-27-4	Bromodichloromethane	-	-	-	-	-	-	-	-
75-25-2	Bromoform	-	-	-	-	-	-	-	-
74-83-9	Bromomethane	-	-	-	-	-	-	-	-
106-94-5	Bromopropane, 1-	-	-	-	-	-	-	-	-
106-99-0	Butadiene, 1,3-	-	-	-	-	-	-	-	-
78-92-2	Butyl alcohol, sec-	-	-	-	-	-	-	-	-
111-76-2	Butyl Cellosolve (ethylene g	-	-	-	-	-	-	-	-
25013-16-5	Butylated hydroxyanisole	-	-	-	-	-	-	-	-
3068-88-0	Butyrolactone, beta-	-	-	-	-	-	-	-	-
7440-43-9	Cadmium	-	-	-	-	-	-	-	-
CADMIUM-CO	Cadmium Compounds	-	-	-	-	-	-	-	-
13765-19-0	Calcium Chromate	-	-	-	-	-	-	-	-
105-60-2	Caprolactum	-	-	-	-	-	-	-	-
75-15-0	Carbon disulfide	-	-	-	-	-	-	-	-
630-08-0	Carbon Monoxide	-	-	-	-	-	-	-	-
56-23-5	Carbon tetrachloride	-	-	-	-	-	-	-	-
463-58-1	Carbonyl sulfide	-	-	-	-	-	-	-	-
111-15-9	Cellosolve Acetate (ethylen	-	-	-	-	-	-	-	-
1306-38-3	Cerium Oxide and Cerium C	-	-	-	-	-	-	-	-
12789-03-6	Chlordane or (57-74-9)	-	-	-	-	-	-	-	-
115-28-6	Chlorendic acid	-	-	-	-	-	-	-	-
108171-26-2	Chlorinated Paraffins (C12,	-	-	-	-	-	-	-	-
7782-50-5	Chlorine	-	-	-	-	-	-	-	-

10049-04-4	Chlorine Oxide (CLO2)	-	-	-	-	-	-	-	-
75-68-3	Chloro-1,1-difluoroethane, 1	-	-	-	-	-	-	-	-
563-47-3	Chloro-2-methylpropene, 3-	-	-	-	-	-	-	-	-
95-83-0	Chloro-o-phenylenediamine	-	-	-	-	-	-	-	-
95-69-2	Chloro-o-toluidine, p-	-	-	-	-	-	-	-	-
532-27-4	Chloroacetophenone, 2-	-	-	-	-	-	-	-	-
108-90-7	Chlorobenzene	-	-	-	-	-	-	-	-
98-56-6	Chlorobenzotrifluoride, 4-	-	-	-	-	-	-	-	-
75-45-6	Chlorodifluoromethane (HC	-	-	-	-	-	-	-	-
67-66-3	Chloroform	-	-	-	-	-	-	-	-
107-30-2	Chloromethyl Methyl Ether	-	-	-	-	-	-	-	-
88-73-3	Chloronitrobenzene, o-	-	-	-	-	-	-	-	-
100-00-5	Chloronitrobenzene, p-	-	-	-	-	-	-	-	-
76-06-2	Chloropicrin	-	-	-	-	-	-	-	-
126-99-8	Chloroprene	-	-	-	-	-	-	-	-
1333-82-0	Chromic acid mists and diss	-	-	-	-	-	-	-	-
7440-47-3	Chromium	-	-	-	-	-	-	-	-
18540-29-9	Chromium (Hexavalent)	-	-	-	-	-	-	-	-
18540-29-9-p	Chromium (Hexavalent) - P	-	-	-	-	-	-	-	-
CHROM-COM	Chromium Compounds	-	-	-	-	-	-	-	-
16065-83-1	Chromium(III) Compounds	-	-	-	-	-	-	-	-
218-01-9	Chrysene (Benzo(a)phenan	-	-	-	-	-	-	-	-
87-29-6	Cinnamyl anthranilate	-	-	-	-	-	-	-	-
10061-01-5	cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-
8007-45-2	Coal Tar	-	-	-	-	-	-	-	-
7440-48-4	Cobalt	-	-	-	-	-	-	-	-
0-00-7	Coke Oven Emissions	-	-	-	-	-	-	-	-
7440-50-8	Copper	-	-	-	-	-	-	-	-
COPPER-CO	Copper Compounds	-	-	-	-	-	-	-	-
120-71-8	Cresidine, p-	-	-	-	-	-	-	-	-
108-39-4	Cresol, m-	-	-	-	-	-	-	-	-
95-48-7	Cresol, o-	-	-	-	-	-	-	-	-
106-44-5	Cresol, p-	-	-	-	-	-	-	-	-
1319-77-3	Cresols/Cresylic acid (isome	-	-	-	-	-	-	-	-
98-82-8	Cumene	-	-	-	-	-	-	-	-
135-20-6	Cupferron	-	-	-	-	-	-	-	-
57-12-5	Cyanide (Cyanide ion, Inorg	-	-	-	-	-	-	-	-
CYANIDE-CO	Cyanide Compounds	-	-	-	-	-	-	-	-
110-82-7	Cyclohexane	-	-	-	-	-	-	-	-
108-94-1	Cyclohexanone	-	-	-	-	-	-	-	-
27208-37-3	Cyclopenta[c,d]pyrene	-	-	-	-	-	-	-	-
50-29-3	DDT	-	-	-	-	-	-	-	-
615-05-4	Diaminoanisole, 2,4-	-	-	-	-	-	-	-	-
101-80-4	Diaminodiphenyl ether, 4,4-	-	-	-	-	-	-	-	-
103-33-3	Diazene, Diphenyl	-	-	-	-	-	-	-	-
226-36-8	Dibenz(a,h)acridine	-	-	-	-	-	-	-	-
224-42-0	Dibenz(a,j)acridine	-	-	-	-	-	-	-	-
53-70-3	Dibenz[a,h]anthracene	-	-	-	-	-	-	-	-
192-65-4	Dibenzo(a,e)pyrene	-	-	-	-	-	-	-	-
189-64-0	Dibenzo(a,h)pyrene	-	-	-	-	-	-	-	-
191-30-0	Dibenzo(a,l)pyrene	-	-	-	-	-	-	-	-
194-59-2	Dibenzo(c,g)carbazole, 7H-	-	-	-	-	-	-	-	-
5385-75-1	Dibenzo[a,e]fluoranthene	-	-	-	-	-	-	-	-
189-55-9	Dibenzo[a,i]pyrene	-	-	-	-	-	-	-	-
96-12-8	Dibromo-3-chloropropane, 1	-	-	-	-	-	-	-	-
764-41-0	Dichloro-2-butene, 1,4-	-	-	-	-	-	-	-	-
1476-11-5	Dichloro-2-butene, cis-1,4-	-	-	-	-	-	-	-	-
106-46-7	Dichlorobenzene(p), 1,4-	-	-	-	-	-	-	-	-
25321-22-6	Dichlorobenzenes	-	-	-	-	-	-	-	-
91-94-1	Dichlorobenzidene, 3,3-	-	-	-	-	-	-	-	-
75-71-8	Dichlorodifluoromethane (C	-	-	-	-	-	-	-	-
75-35-4	Dichloroethylene (1,1-) (Vin	-	-	-	-	-	-	-	-
156-60-5	Dichloroethylene, trans-1,2-	-	-	-	-	-	-	-	-
542-75-6	Dichloropropene, 1,3-	-	-	-	-	-	-	-	-
78-88-6	Dichloropropene, 2,3-	-	-	-	-	-	-	-	-
62-73-7	Dichlorvos	-	-	-	-	-	-	-	-
77-73-6	Dicyclopentadiene	-	-	-	-	-	-	-	-
60-57-1	Dieldrin	-	-	-	-	-	-	-	-
0-02-4	Diesel exhaust particulate	-	-	-	-	-	-	-	-
111-42-2	Diethanolamine	-	-	-	-	-	-	-	-
112-34-5	Diethylene Glycol Monobuty	-	-	-	-	-	-	-	-
111-90-0	Diethylene Glycol Monoethy	-	-	-	-	-	-	-	-
75-37-6	Difluoroethane, 1,1-	-	-	-	-	-	-	-	-
108-20-3	Diisopropyl Ether	-	-	-	-	-	-	-	-
60-11-7	Dimethyl aminoazobenzene	-	-	-	-	-	-	-	-
68-12-2	Dimethyl formamide	-	-	-	-	-	-	-	-
108-01-0	Dimethylamino ethanol, 2-	-	-	-	-	-	-	-	-
57-97-6	Dimethylbenz[a]anthracene,	-	-	-	-	-	-	-	-
57-14-7	Dimethylhydrazine, 1,1-	-	-	-	-	-	-	-	-
42397-64-8	Dinitropyrene, 1,6- (BaP)	-	-	-	-	-	-	-	-
42397-65-9	Dinitropyrene, 1,8- (BaP)	-	-	-	-	-	-	-	-
121-14-2	Dinitrotoluene, 2,4-	-	-	-	-	-	-	-	-
123-91-1	Dioxane, 1,4- (1,4-Diethylen	-	-	-	-	-	-	-	-
122-66-7	Diphenylhydrazine, 1,2-	-	-	-	-	-	-	-	-
106-89-8	Epichlorohydrin (l-Chloro-2,	-	-	-	-	-	-	-	-
106-88-7	Epoxybutane, 1,2-	-	-	-	-	-	-	-	-
110-80-5	Ethoxyethanol, 2- (ethylene	-	-	-	-	-	-	-	-
141-78-6	Ethyl acetate	-	-	-	-	-	-	-	-
140-88-5	Ethyl Acrylate	-	-	-	-	-	-	-	-
100-41-4	Ethyl benzene	-	-	-	-	-	-	-	-
51-79-6	Ethyl carbamate (Urethane)	-	-	-	-	-	-	-	-

75-00-3	Ethyl chloride (Chloroethane	-	-	-	-	-	-	-	-
97-63-2	Ethyl Methacrylate	-	-	-	-	-	-	-	-
106-93-4	Ethylene dibromide (Dibrom	-	-	-	-	-	-	-	-
107-06-2	Ethylene dichloride (1,2-Dic	-	-	-	-	-	-	-	-
107-21-1	Ethylene glycol	-	-	-	-	-	-	-	-
75-21-8	Ethylene oxide	-	-	-	-	-	-	-	-
96-45-7	Ethylene thiourea	-	-	-	-	-	-	-	-
75-34-3	Ethylidene dichloride (1,1-D	-	-	-	-	-	-	-	-
206-44-0	Fluoranthene	-	-	-	-	-	-	-	-
FLUORIDES	Fluorides (except hydrogen	-	-	-	-	-	-	-	-
50-00-0	Formaldehyde	-	-	-	-	-	-	-	-
64-18-6	Formic Acid	-	-	-	-	-	-	-	-
111-30-8	Glutaraldehyde	-	-	-	-	-	-	-	-
0-01-2	Glycol ethers	-	-	-	-	-	-	-	-
76-44-8	Heptachlor	-	-	-	-	-	-	-	-
1024-57-3	Heptachlor epoxide	-	-	-	-	-	-	-	-
35822-46-9	Heptachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-5	Heptachlorodibenzodioxin,	-	-	-	-	-	-	-	-
67562-39-4	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
55673-89-7	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
00-08-4	Heptachlorodibenzofuran, A	-	-	-	-	-	-	-	-
142-82-5	Heptane, N	-	-	-	-	-	-	-	-
118-74-1	Hexachlorobenzene	-	-	-	-	-	-	-	-
87-68-3	Hexachlorobutadiene	-	-	-	-	-	-	-	-
608-73-1	Hexachlorocyclohexane (tec	-	-	-	-	-	-	-	-
319-84-6	Hexachlorocyclohexane, alp	-	-	-	-	-	-	-	-
319-85-7	Hexachlorocyclohexane, be	-	-	-	-	-	-	-	-
77-47-4	Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-
39227-28-6	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
57653-85-7	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
19408-74-3	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-3	Hexachlorodibenzodioxins,	-	-	-	-	-	-	-	-
70648-26-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
57117-44-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
72918-21-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
60851-34-5	Hexachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-
00-08-2	Hexachlorodibenzofurans, A	-	-	-	-	-	-	-	-
67-72-1	Hexachloroethane	-	-	-	-	-	-	-	-
822-06-0	Hexamethylene-1,6-diisocya	-	-	-	-	-	-	-	-
110-54-3	Hexane	-	-	-	-	-	-	-	-
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl	-	-	-	-	-	-	-	-
591-78-6	Hexanone-2	-	-	-	-	-	-	-	-
302-01-2	Hydrazine	-	-	-	-	-	-	-	-
10034-93-2	Hydrazine sulfate	-	-	-	-	-	-	-	-
7647-01-0	Hydrochloric acid (hydrogen	-	-	-	-	-	-	-	-
74-90-8	Hydrogen cyanide	-	-	-	-	-	-	-	-
7664-39-3	Hydrogen fluoride (Hydroflu	-	-	-	-	-	-	-	-
7783-07-5	Hydrogen selenide	-	-	-	-	-	-	-	-
7783-06-4	Hydrogen sulfide	-	-	-	-	-	-	-	-
193-39-5	Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-
5888-33-5	Isobornyl acrylate	-	-	-	-	-	-	-	-
78-59-1	Isophorone	-	-	-	-	-	-	-	-
67-63-0	Isopropyl alcohol	-	-	-	-	-	-	-	-
7439-92-1	Lead	-	-	-	-	-	-	-	-
7758-97-6	Lead Chromate	-	-	-	-	-	-	-	-
LEAD-COMP	Lead Compounds	-	-	-	-	-	-	-	-
58-89-9	Lindane (all isomers)	-	-	-	-	-	-	-	-
108-31-6	Maleic anhydride	-	-	-	-	-	-	-	-
7439-96-5	Manganese	-	-	-	-	-	-	-	-
MANGANESE	Manganese Compounds	-	-	-	-	-	-	-	-
7439-97-6	Mercury (elemental)	-	-	-	-	-	-	-	-
MERCURY-C	Mercury Compounds	-	-	-	-	-	-	-	-
126-98-7	Methacrylonitrile	-	-	-	-	-	-	-	-
67-56-1	Methanol	-	-	-	-	-	-	-	-
109-86-4	Methoxyethanol, 2- (ethylen	-	-	-	-	-	-	-	-
96-33-3	Methyl acrylate	-	-	-	-	-	-	-	-
110-49-6	Methyl Cellosolve Acetate	-	-	-	-	-	-	-	-
74-87-3	Methyl chloride (Chlorometh	-	-	-	-	-	-	-	-
71-55-6	Methyl chloroform (1,1,1-Tri	-	-	-	-	-	-	-	-
78-93-3	Methyl ethyl ketone (2-Buta	-	-	-	-	-	-	-	-
60-34-4	Methyl Hydrazine	-	-	-	-	-	-	-	-
108-10-1	Methyl isobutyl ketone (Hex	-	-	-	-	-	-	-	-
624-83-9	Methyl isocyanate	-	-	-	-	-	-	-	-
80-62-6	Methyl methacrylate	-	-	-	-	-	-	-	-
1634-04-4	Methyl tert butyl ether	-	-	-	-	-	-	-	-
56-49-5	Methylcholanthrene, 3-	-	-	-	-	-	-	-	-
3697-24-3	Methylchrysene, 5-	-	-	-	-	-	-	-	-
101-14-4	Methylene bis(2-chloroanilin	-	-	-	-	-	-	-	-
74-95-3	Methylene Bromide	-	-	-	-	-	-	-	-
75-09-2	Methylene chloride (Dichlor	-	-	-	-	-	-	-	-
101-68-8	Methylene diphenyl diisocya	-	-	-	-	-	-	-	-
101-77-9	Methylenedianiline, 4,4-	-	-	-	-	-	-	-	-
90-94-8	Michler's ketone	-	-	-	-	-	-	-	-
10595-95-6	N- Nitrosomethylethylamine	-	-	-	-	-	-	-	-
924-16-3	N-Nitrosodi-n-butylamine	-	-	-	-	-	-	-	-
621-64-7	N-Nitrosodi-n-propylamine	-	-	-	-	-	-	-	-
55-18-5	N-Nitrosodiethylamine	-	-	-	-	-	-	-	-
62-75-9	N-Nitrosodimethylamine	-	-	-	-	-	-	-	-
86-30-6	N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-
59-89-2	N-Nitrosomorpholine	-	-	-	-	-	-	-	-
100-75-4	N-Nitrosopiperidine	-	-	-	-	-	-	-	-

111-84-2	N-Nonane	-	-	-	-	-	-	-	-
64724-95-6	Naphtha, High Flash Aroma	-	-	-	-	-	-	-	-
91-20-3	Naphthalene	-	-	-	-	-	-	-	-
193-09-9	Naphtho[2,3-e]pyrene	-	-	-	-	-	-	-	-
7440-02-0	Nickel	-	-	-	-	-	-	-	-
NICKEL-COM	Nickel Compounds	-	-	-	-	-	-	-	-
1313-99-1	Nickel oxide	-	-	-	-	-	-	-	-
0-02-5	Nickel refinery dust from the	-	-	-	-	-	-	-	-
12035-72-2	Nickel sulfide (NI3S2)	-	-	-	-	-	-	-	-
7697-37-2	Nitric acid	-	-	-	-	-	-	-	-
139-13-9	Nitrilotriacetic acid	-	-	-	-	-	-	-	-
18662-53-8	Nitrilotriacetic acid, trisodiu	-	-	-	-	-	-	-	-
602-87-9	Nitroacenaphthene, 5-	-	-	-	-	-	-	-	-
88-74-4	Nitroaniline, 2-	-	-	-	-	-	-	-	-
100-01-6	Nitroaniline, 4-	-	-	-	-	-	-	-	-
98-95-3	Nitrobenzene	-	-	-	-	-	-	-	-
7496-02-8	Nitrochrysene, 6-	-	-	-	-	-	-	-	-
607-57-8	Nitrofluorene, 2-	-	-	-	-	-	-	-	-
10102-44-0	Nitrogen dioxide (NO2)	-	-	-	-	-	-	-	-
75-52-5	Nitromethane	-	-	-	-	-	-	-	-
79-46-9	Nitropropane, 2-	-	-	-	-	-	-	-	-
5522-43-0	Nitropyrene, 1-	-	-	-	-	-	-	-	-
57835-92-4	Nitropyrene, 4-	-	-	-	-	-	-	-	-
156-10-5	Nitrosodiphenylamine, p-	-	-	-	-	-	-	-	-
3268-87-9	Octachlorodibenzo-p-dioxin,	-	-	-	-	-	-	-	-
39001-02-0	Octachlorodibenzofuran, 1,2	-	-	-	-	-	-	-	-
10028-15-6	Ozone	-	-	-	-	-	-	-	-
74472-37-0	PCB 114 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
31508-00-6	PCB 118 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
65510-44-3	PCB 123 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
57465-28-8	PCB 126 (3,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
38380-0804	PCB 156 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Hep	-	-	-	-	-	-	-	-
32598-13-3	PCB 77 (3,3,4,4-Tetrachloro	-	-	-	-	-	-	-	-
70362-50-4	PCB 81 (3,4,4,5 Tetrachloro	-	-	-	-	-	-	-	-
32598-14-4	PCB105 (2,3,3,4,4 Pentachl	-	-	-	-	-	-	-	-
40321-76-4	Pentachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-1	Pentachlorodibenzodioxins,	-	-	-	-	-	-	-	-
57117-41-6	Pentachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
57117-31-4	Pentachlorodibenzofuran, 2	-	-	-	-	-	-	-	-
00-09-0	Pentachlorodibenzofurans,	-	-	-	-	-	-	-	-
87-86-5	Pentachlorophenol	-	-	-	-	-	-	-	-
109-66-0	Pentane, n-	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
85-01-8	Phenanthrene	-	-	-	-	-	-	-	-
108-95-2	Phenol	-	-	-	-	-	-	-	-
75-44-5	Phosgene	-	-	-	-	-	-	-	-
7803-51-2	Phosphine	-	-	-	-	-	-	-	-
7664-38-2	Phosphoric acid	-	-	-	-	-	-	-	-
85-44-9	Phthalic anhydride	-	-	-	-	-	-	-	-
59536-65-1	Polybrominated Biphenyls	-	-	-	-	-	-	-	-
1336-36-3	Polychlorinated biphenyls (A	-	-	-	-	-	-	-	-
00-08-0	Polychlorinated Dibenzo-P-	-	-	-	-	-	-	-	-
00-05-0	Polychlorinated Dibenzodio	-	-	-	-	-	-	-	-
00-05-1	Polychlorinated Dibenzofura	-	-	-	-	-	-	-	-
130498-29-2	Polycyclic Aromatic Hydroca	-	-	-	-	-	-	-	-
00-01-7	Polycyclic Organic Matter (P	-	-	-	-	-	-	-	-
9016-87-9	Polymeric diphenylmethane	-	-	-	-	-	-	-	-
7758-01-2	Potassium bromate	-	-	-	-	-	-	-	-
1120-71-4	Propane sultone, 1,3-	-	-	-	-	-	-	-	-
57-57-8	Propiolactone, beta-	-	-	-	-	-	-	-	-
123-38-6	Propionaldehyde	-	-	-	-	-	-	-	-
115-07-1	Propylene	-	-	-	-	-	-	-	-
78-87-5	Propylene dichloride (1,2-Di	-	-	-	-	-	-	-	-
107-98-2	Propylene Glycol Monometh	-	-	-	-	-	-	-	-
75-56-9	Propylene oxide	-	-	-	-	-	-	-	-
930-55-2	Pyrrolidine, 1-Nitroso-	-	-	-	-	-	-	-	-
7782-49-2	Selenium	-	-	-	-	-	-	-	-
0-01-9	Selenium Compounds	-	-	-	-	-	-	-	-
7631-86-9	Silica (crystalline, respirable	-	-	-	-	-	-	-	-
1310-73-2	Sodium hydroxide	-	-	-	-	-	-	-	-
10588-01-9	Sodium Dichromate	-	-	-	-	-	-	-	-
7789-06-2	Strontium chromate	-	-	-	-	-	-	-	-
100-42-5	Styrene	-	-	-	-	-	-	-	-
96-09-3	Styrene oxide	-	-	-	-	-	-	-	-
14808-79-8	Sulfates	-	-	-	-	-	-	-	-
126-33-0	Sulfolane	-	-	-	-	-	-	-	-
7446-09-5	Sulfur dioxide	-	-	-	-	-	-	-	-
7664-93-9	Sulfuric acid (aerosol forms	-	-	-	-	-	-	-	-
8014-95-7	Sulfuric Acid mixture w. sulf	-	-	-	-	-	-	-	-
00-09-1	TCDD Eqivalents, 2,3,7,8-	-	-	-	-	-	-	-	-
540-88-5	Tert-Butyl Acetate	-	-	-	-	-	-	-	-
1746-01-6	Tetrachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-8	Tetrachlorodibenzodioxins,	-	-	-	-	-	-	-	-
51207-31-9	Tetrachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-

00-08-6	Tetrachlorodibenzofurans, A	-	-	-	-	-	-	-	-
630-20-6	Tetrachloroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
79-34-5	Tetrachloroethane, 1,1,2,2-	-	-	-	-	-	-	-	-
127-18-4	Tetrachloroethylene (Perchl	-	-	-	-	-	-	-	-
811-97-2	Tetrafluoroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
109-99-9	Tetrahydrofuran	-	-	-	-	-	-	-	-
62-55-5	Thioacetamide	-	-	-	-	-	-	-	-
62-56-6	Thiourea	-	-	-	-	-	-	-	-
108-88-3	Toluene	-	-	-	-	-	-	-	-
584-84-9	Toluene-2,4-diisocyanate	-	-	-	-	-	-	-	-
91-08-7	Toluene-2,6-diisocyanate	-	-	-	-	-	-	-	-
95-80-7	Toluene diamine, 2,4-	-	-	-	-	-	-	-	-
26471-62-5	Toluenediisocyanate (mixed	-	-	-	-	-	-	-	-
95-53-4	Toluidine, o- (Methylaniline,	-	-	-	-	-	-	-	-
8001-35-2	Toxaphene (chlorinated ca	-	-	-	-	-	-	-	-
10061-02-6	trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-
120-82-1	Trichlorobenzene, 1,2,4-	-	-	-	-	-	-	-	-
79-00-5	Trichloroethane, 1,1,2-	-	-	-	-	-	-	-	-
79-01-6	Trichloroethylene (TCE)	-	-	-	-	-	-	-	-
75-69-4	Trichlorofluoromethane (CF	-	-	-	-	-	-	-	-
88-06-2	Trichlorophenol, 2,4,6-	-	-	-	-	-	-	-	-
96-18-4	Trichloropropane, 1,2,3-	-	-	-	-	-	-	-	-
96-19-5	Trichloropropene, 1,2,3-	-	-	-	-	-	-	-	-
76-13-1	Trichlorotrifluoroethane, 1,1	-	-	-	-	-	-	-	-
121-44-8	Triethylamine	-	-	-	-	-	-	-	-
420-46-2	Trifluoroethane, 1,1,1-	-	-	-	-	-	-	-	-
526-73-8	Trimethylbenzene, 1,2,3-	-	-	-	-	-	-	-	-
95-63-6	Trimethylbenzene, 1,2,4-	-	-	-	-	-	-	-	-
108-67-8	Trimethylbenzene, 1,3,5-	-	-	-	-	-	-	-	-
URANIUM-SO	Uranium (Soluble Salts)	-	-	-	-	-	-	-	-
7440-61-1	Uranium, Insoluble Compou	-	-	-	-	-	-	-	-
7440-62-2	Vanadium and Compounds	-	-	-	-	-	-	-	-
1314-62-1	Vanadium Pentoxide, (V2O	-	-	-	-	-	-	-	-
108-05-4	Vinyl acetate	-	-	-	-	-	-	-	-
593-60-2	Vinyl bromide	-	-	-	-	-	-	-	-
75-01-4	Vinyl chloride	-	-	-	-	-	-	-	-
1330-20-7	Xylenes	-	-	-	-	-	-	-	-
108-38-3	Xylenes, m-	-	-	-	-	-	-	-	-
95-47-6	Xylenes, o-	-	-	-	-	-	-	-	-
106-42-3	Xylenes, p-	-	-	-	-	-	-	-	-
13530-65-9	Zinc chromate	-	-	-	-	-	-	-	-

RASS version: 2020-12

No inputs needed on this page

Air Concentrations in ug/m3

		Stack #16				Stack #17			
CAS# or MPCA#	**Chemical Name**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**
202-94-8	11H-Benz[b,c]aceanthrylene	-	-	-	-	-	-	-	-
202-98-2	4H-Cyclopenta[d,e,f]chrysen	-	-	-	-	-	-	-	-
75-07-0	Acetaldehyde	-	-	-	-	-	-	-	-
60-35-5	Acetamide	-	-	-	-	-	-	-	-
67-64-1	Acetone	-	-	-	-	-	-	-	-
75-86-5	Acetone Cyanohydrin	-	-	-	-	-	-	-	-
75-05-8	Acetonitrile	-	-	-	-	-	-	-	-
53-96-3	Acetylaminofluorene, 2-	-	-	-	-	-	-	-	-
107-02-8	Acrolein	-	-	-	-	-	-	-	-
79-06-1	Acrylamide	-	-	-	-	-	-	-	-
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-	-	-	-	-	-	-	-	-
79-10-7	Acrylic acid	-	-	-	-	-	-	-	-
107-13-1	Acrylonitrile	-	-	-	-	-	-	-	-
111-69-3	Adiponitrile	-	-	-	-	-	-	-	-
ALDEHYDES	Aldehydes	-	-	-	-	-	-	-	-
309-00-2	Aldrin	-	-	-	-	-	-	-	-
ALIPHATIC-M	Aliphatic Hydrocarbon Strea	-	-	-	-	-	-	-	-
107-05-1	Allyl chloride	-	-	-	-	-	-	-	-
7429-90-5	Aluminum	-	-	-	-	-	-	-	-
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3	-	-	-	-	-	-	-	-
6109-97-3	Amino-9-ethylcarbazolehydr	-	-	-	-	-	-	-	-
117-79-3	Aminoanthraquinone, 2-	-	-	-	-	-	-	-	-
7664-41-7	Ammonia	-	-	-	-	-	-	-	-
62-53-3	Aniline	-	-	-	-	-	-	-	-
191-26-4	Anthanthrene	-	-	-	-	-	-	-	-
7440-36-0	Antimony	-	-	-	-	-	-	-	-
ANTIMONY-C	Antimony Compounds	-	-	-	-	-	-	-	-
1309-64-4	Antimony trioxide	-	-	-	-	-	-	-	-
140-57-8	Aramite	-	-	-	-	-	-	-	-
7440-38-2	Arsenic	-	-	-	-	-	-	-	-
ARSENIC-CO	Arsenic Compounds	-	-	-	-	-	-	-	-
1327-53-3	Arsenic Trioxide	-	-	-	-	-	-	-	-
7784-42-1	Arsine	-	-	-	-	-	-	-	-
1332-21-4	Asbestos (units in fibers)	-	-	-	-	-	-	-	-
1332-21-4-LA	Asbestos, Libby Amphibole	-	-	-	-	-	-	-	-
123-77-3	Azodicarbonamide	-	-	-	-	-	-	-	-
10294-40-3	Barium Chromate	-	-	-	-	-	-	-	-
199-54-2	Benz[e]aceanthrylene	-	-	-	-	-	-	-	-
202-33-5	Benz[j]aceanthrylene	-	-	-	-	-	-	-	-
211-91-6	Benz[l]aceanthrylene	-	-	-	-	-	-	-	-
71-43-2	Benzene	-	-	-	-	-	-	-	-
92-87-5	Benzidine	-	-	-	-	-	-	-	-
205-82-3	Benzo(j)fluoranthene	-	-	-	-	-	-	-	-
207-08-9	Benzo(k)fluoranthene	-	-	-	-	-	-	-	-
56-55-3	Benzo[a]anthracene	-	-	-	-	-	-	-	-
50-32-8	Benzo[a]pyrene	-	-	-	-	-	-	-	-
205-99-2	Benzo[b]fluoranthene	-	-	-	-	-	-	-	-
205-12-9	Benzo[c]fluorene	-	-	-	-	-	-	-	-
191-24-2	Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-
65-85-0	Benzoic Acid	-	-	-	-	-	-	-	-
100-44-7	Benzyl chloride	-	-	-	-	-	-	-	-
7440-41-7	Beryllium	-	-	-	-	-	-	-	-
BERYLLIUM-	Beryllium Compounds	-	-	-	-	-	-	-	-
13510-49-1	Beryllium sulfate	-	-	-	-	-	-	-	-
111-44-4	Bis(2-chloroethyl)ether	-	-	-	-	-	-	-	-
117-81-7	Bis(2-ethylhexyl)phthalate (	-	-	-	-	-	-	-	-
542-88-1	Bis(chloromethyl)ether	-	-	-	-	-	-	-	-
7440-42-8	Boron And Borates Only	-	-	-	-	-	-	-	-
10294-34-5	Boron Trichloride	-	-	-	-	-	-	-	-
7637-07-2	Boron Trifluoride	-	-	-	-	-	-	-	-
108-86-1	Bromobenzene	-	-	-	-	-	-	-	-
74-97-5	Bromochloromethane	-	-	-	-	-	-	-	-
75-27-4	Bromodichloromethane	-	-	-	-	-	-	-	-
75-25-2	Bromoform	-	-	-	-	-	-	-	-
74-83-9	Bromomethane	-	-	-	-	-	-	-	-
106-94-5	Bromopropane, 1-	-	-	-	-	-	-	-	-
106-99-0	Butadiene, 1,3-	-	-	-	-	-	-	-	-
78-92-2	Butyl alcohol, sec-	-	-	-	-	-	-	-	-
111-76-2	Butyl Cellosolve (ethylene g	-	-	-	-	-	-	-	-
25013-16-5	Butylated hydroxyanisole	-	-	-	-	-	-	-	-
3068-88-0	Butyrolactone, beta-	-	-	-	-	-	-	-	-
7440-43-9	Cadmium	-	-	-	-	-	-	-	-
CADMIUM-CO	Cadmium Compounds	-	-	-	-	-	-	-	-
13765-19-0	Calcium Chromate	-	-	-	-	-	-	-	-
105-60-2	Caprolactum	-	-	-	-	-	-	-	-
75-15-0	Carbon disulfide	-	-	-	-	-	-	-	-
630-08-0	Carbon Monoxide	-	-	-	-	-	-	-	-
56-23-5	Carbon tetrachloride	-	-	-	-	-	-	-	-
463-58-1	Carbonyl sulfide	-	-	-	-	-	-	-	-
111-15-9	Cellosolve Acetate (ethylen	-	-	-	-	-	-	-	-
1306-38-3	Cerium Oxide and Cerium C	-	-	-	-	-	-	-	-
12789-03-6	Chlordane or (57-74-9)	-	-	-	-	-	-	-	-
115-28-6	Chlorendic acid	-	-	-	-	-	-	-	-
108171-26-2	Chlorinated Paraffins (C12,	-	-	-	-	-	-	-	-
7782-50-5	Chlorine	-	-	-	-	-	-	-	-

10049-04-4	Chlorine Oxide (CLO2)	-	-	-	-	-	-	-	-
75-68-3	Chloro-1,1-difluoroethane, 1	-	-	-	-	-	-	-	-
563-47-3	Chloro-2-methylpropene, 3-	-	-	-	-	-	-	-	-
95-83-0	Chloro-o-phenylenediamine	-	-	-	-	-	-	-	-
95-69-2	Chloro-o-toluidine, p-	-	-	-	-	-	-	-	-
532-27-4	Chloroacetophenone, 2-	-	-	-	-	-	-	-	-
108-90-7	Chlorobenzene	-	-	-	-	-	-	-	-
98-56-6	Chlorobenzotrifluoride, 4-	-	-	-	-	-	-	-	-
75-45-6	Chlorodifluoromethane (HC	-	-	-	-	-	-	-	-
67-66-3	Chloroform	-	-	-	-	-	-	-	-
107-30-2	Chloromethyl Methyl Ether	-	-	-	-	-	-	-	-
88-73-3	Chloronitrobenzene, o-	-	-	-	-	-	-	-	-
100-00-5	Chloronitrobenzene, p-	-	-	-	-	-	-	-	-
76-06-2	Chloropicrin	-	-	-	-	-	-	-	-
126-99-8	Chloroprene	-	-	-	-	-	-	-	-
1333-82-0	Chromic acid mists and diss	-	-	-	-	-	-	-	-
7440-47-3	Chromium	-	-	-	-	-	-	-	-
18540-29-9	Chromium (Hexavalent)	-	-	-	-	-	-	-	-
18540-29-9-p	Chromium (Hexavalent) - P	-	-	-	-	-	-	-	-
CHROM-COM	Chromium Compounds	-	-	-	-	-	-	-	-
16065-83-1	Chromium(III) Compounds	-	-	-	-	-	-	-	-
218-01-9	Chrysene (Benzo(a)phenan	-	-	-	-	-	-	-	-
87-29-6	Cinnamyl anthranilate	-	-	-	-	-	-	-	-
10061-01-5	cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-
8007-45-2	Coal Tar	-	-	-	-	-	-	-	-
7440-48-4	Cobalt	-	-	-	-	-	-	-	-
0-00-7	Coke Oven Emissions	-	-	-	-	-	-	-	-
7440-50-8	Copper	-	-	-	-	-	-	-	-
COPPER-CO	Copper Compounds	-	-	-	-	-	-	-	-
120-71-8	Cresidine, p-	-	-	-	-	-	-	-	-
108-39-4	Cresol, m-	-	-	-	-	-	-	-	-
95-48-7	Cresol, o-	-	-	-	-	-	-	-	-
106-44-5	Cresol, p-	-	-	-	-	-	-	-	-
1319-77-3	Cresols/Cresylic acid (isome	-	-	-	-	-	-	-	-
98-82-8	Cumene	-	-	-	-	-	-	-	-
135-20-6	Cupferron	-	-	-	-	-	-	-	-
57-12-5	Cyanide (Cyanide ion, Inorg	-	-	-	-	-	-	-	-
CYANIDE-CO	Cyanide Compounds	-	-	-	-	-	-	-	-
110-82-7	Cyclohexane	-	-	-	-	-	-	-	-
108-94-1	Cyclohexanone	-	-	-	-	-	-	-	-
27208-37-3	Cyclopenta[c,d]pyrene	-	-	-	-	-	-	-	-
50-29-3	DDT	-	-	-	-	-	-	-	-
615-05-4	Diaminoanisole, 2,4-	-	-	-	-	-	-	-	-
101-80-4	Diaminodiphenyl ether, 4,4-	-	-	-	-	-	-	-	-
103-33-3	Diazene, Diphenyl	-	-	-	-	-	-	-	-
226-36-8	Dibenz(a,h)acridine	-	-	-	-	-	-	-	-
224-42-0	Dibenz(a,j)acridine	-	-	-	-	-	-	-	-
53-70-3	Dibenz[a,h]anthracene	-	-	-	-	-	-	-	-
192-65-4	Dibenzo(a,e)pyrene	-	-	-	-	-	-	-	-
189-64-0	Dibenzo(a,h)pyrene	-	-	-	-	-	-	-	-
191-30-0	Dibenzo(a,l)pyrene	-	-	-	-	-	-	-	-
194-59-2	Dibenzo(c,g)carbazole, 7H-	-	-	-	-	-	-	-	-
5385-75-1	Dibenzo[a,e]fluoranthene	-	-	-	-	-	-	-	-
189-55-9	Dibenzo[a,i]pyrene	-	-	-	-	-	-	-	-
96-12-8	Dibromo-3-chloropropane, 1	-	-	-	-	-	-	-	-
764-41-0	Dichloro-2-butene, 1,4-	-	-	-	-	-	-	-	-
1476-11-5	Dichloro-2-butene, cis-1,4-	-	-	-	-	-	-	-	-
106-46-7	Dichlorobenzene(p), 1,4-	-	-	-	-	-	-	-	-
25321-22-6	Dichlorobenzenes	-	-	-	-	-	-	-	-
91-94-1	Dichlorobenzidene, 3,3-	-	-	-	-	-	-	-	-
75-71-8	Dichlorodifluoromethane (C	-	-	-	-	-	-	-	-
75-35-4	Dichloroethylene (1,1-) (Vin	-	-	-	-	-	-	-	-
156-60-5	Dichloroethylene, trans-1,2-	-	-	-	-	-	-	-	-
542-75-6	Dichloropropene, 1,3-	-	-	-	-	-	-	-	-
78-88-6	Dichloropropene, 2,3-	-	-	-	-	-	-	-	-
62-73-7	Dichlorvos	-	-	-	-	-	-	-	-
77-73-6	Dicyclopentadiene	-	-	-	-	-	-	-	-
60-57-1	Dieldrin	-	-	-	-	-	-	-	-
0-02-4	Diesel exhaust particulate	-	-	-	-	-	-	-	-
111-42-2	Diethanolamine	-	-	-	-	-	-	-	-
112-34-5	Diethylene Glycol Monobuty	-	-	-	-	-	-	-	-
111-90-0	Diethylene Glycol Monoethy	-	-	-	-	-	-	-	-
75-37-6	Difluoroethane, 1,1-	-	-	-	-	-	-	-	-
108-20-3	Diisopropyl Ether	-	-	-	-	-	-	-	-
60-11-7	Dimethyl aminoazobenzene	-	-	-	-	-	-	-	-
68-12-2	Dimethyl formamide	-	-	-	-	-	-	-	-
108-01-0	Dimethylamino ethanol, 2-	-	-	-	-	-	-	-	-
57-97-6	Dimethylbenz[a]anthracene,	-	-	-	-	-	-	-	-
57-14-7	Dimethylhydrazine, 1,1-	-	-	-	-	-	-	-	-
42397-64-8	Dinitropyrene, 1,6- (BaP)	-	-	-	-	-	-	-	-
42397-65-9	Dinitropyrene, 1,8- (BaP)	-	-	-	-	-	-	-	-
121-14-2	Dinitrotoluene, 2,4-	-	-	-	-	-	-	-	-
123-91-1	Dioxane, 1,4- (1,4-Diethylen	-	-	-	-	-	-	-	-
122-66-7	Diphenylhydrazine, 1,2-	-	-	-	-	-	-	-	-
106-89-8	Epichlorohydrin (l-Chloro-2,	-	-	-	-	-	-	-	-
106-88-7	Epoxybutane, 1,2-	-	-	-	-	-	-	-	-
110-80-5	Ethoxyethanol, 2- (ethylene	-	-	-	-	-	-	-	-
141-78-6	Ethyl acetate	-	-	-	-	-	-	-	-
140-88-5	Ethyl Acrylate	-	-	-	-	-	-	-	-
100-41-4	Ethyl benzene	-	-	-	-	-	-	-	-
51-79-6	Ethyl carbamate (Urethane)	-	-	-	-	-	-	-	-

75-00-3	Ethyl chloride (Chloroethane	-	-	-	-	-	-	-	-
97-63-2	Ethyl Methacrylate	-	-	-	-	-	-	-	-
106-93-4	Ethylene dibromide (Dibrom	-	-	-	-	-	-	-	-
107-06-2	Ethylene dichloride (1,2-Dic	-	-	-	-	-	-	-	-
107-21-1	Ethylene glycol	-	-	-	-	-	-	-	-
75-21-8	Ethylene oxide	-	-	-	-	-	-	-	-
96-45-7	Ethylene thiourea	-	-	-	-	-	-	-	-
75-34-3	Ethylidene dichloride (1,1-D	-	-	-	-	-	-	-	-
206-44-0	Fluoranthene	-	-	-	-	-	-	-	-
FLUORIDES	Fluorides (except hydrogen	-	-	-	-	-	-	-	-
50-00-0	Formaldehyde	-	-	-	-	-	-	-	-
64-18-6	Formic Acid	-	-	-	-	-	-	-	-
111-30-8	Glutaraldehyde	-	-	-	-	-	-	-	-
0-01-2	Glycol ethers	-	-	-	-	-	-	-	-
76-44-8	Heptachlor	-	-	-	-	-	-	-	-
1024-57-3	Heptachlor epoxide	-	-	-	-	-	-	-	-
35822-46-9	Heptachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-5	Heptachlorodibenzodioxin,	-	-	-	-	-	-	-	-
67562-39-4	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
55673-89-7	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
00-08-4	Heptachlorodibenzofuran, A	-	-	-	-	-	-	-	-
142-82-5	Heptane, N	-	-	-	-	-	-	-	-
118-74-1	Hexachlorobenzene	-	-	-	-	-	-	-	-
87-68-3	Hexachlorobutadiene	-	-	-	-	-	-	-	-
608-73-1	Hexachlorocyclohexane (tec	-	-	-	-	-	-	-	-
319-84-6	Hexachlorocyclohexane, alp	-	-	-	-	-	-	-	-
319-85-7	Hexachlorocyclohexane, be	-	-	-	-	-	-	-	-
77-47-4	Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-
39227-28-6	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
57653-85-7	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
19408-74-3	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-3	Hexachlorodibenzodioxins,	-	-	-	-	-	-	-	-
70648-26-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
57117-44-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
72918-21-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
60851-34-5	Hexachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-
00-08-2	Hexachlorodibenzofurans, A	-	-	-	-	-	-	-	-
67-72-1	Hexachloroethane	-	-	-	-	-	-	-	-
822-06-0	Hexamethylene-1,6-diisocya	-	-	-	-	-	-	-	-
110-54-3	Hexane	-	-	-	-	-	-	-	-
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl	-	-	-	-	-	-	-	-
591-78-6	Hexanone-2	-	-	-	-	-	-	-	-
302-01-2	Hydrazine	-	-	-	-	-	-	-	-
10034-93-2	Hydrazine sulfate	-	-	-	-	-	-	-	-
7647-01-0	Hydrochloric acid (hydrogen	-	-	-	-	-	-	-	-
74-90-8	Hydrogen cyanide	-	-	-	-	-	-	-	-
7664-39-3	Hydrogen fluoride (Hydroflu	-	-	-	-	-	-	-	-
7783-07-5	Hydrogen selenide	-	-	-	-	-	-	-	-
7783-06-4	Hydrogen sulfide	-	-	-	-	-	-	-	-
193-39-5	Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-
5888-33-5	Isobornyl acrylate	-	-	-	-	-	-	-	-
78-59-1	Isophorone	-	-	-	-	-	-	-	-
67-63-0	Isopropyl alcohol	-	-	-	-	-	-	-	-
7439-92-1	Lead	-	-	-	-	-	-	-	-
7758-97-6	Lead Chromate	-	-	-	-	-	-	-	-
LEAD-COMP	Lead Compounds	-	-	-	-	-	-	-	-
58-89-9	Lindane (all isomers)	-	-	-	-	-	-	-	-
108-31-6	Maleic anhydride	-	-	-	-	-	-	-	-
7439-96-5	Manganese	-	-	-	-	-	-	-	-
MANGANESE	Manganese Compounds	-	-	-	-	-	-	-	-
7439-97-6	Mercury (elemental)	-	-	-	-	-	-	-	-
MERCURY-C	Mercury Compounds	-	-	-	-	-	-	-	-
126-98-7	Methacrylonitrile	-	-	-	-	-	-	-	-
67-56-1	Methanol	-	-	-	-	-	-	-	-
109-86-4	Methoxyethanol, 2- (ethylen	-	-	-	-	-	-	-	-
96-33-3	Methyl acrylate	-	-	-	-	-	-	-	-
110-49-6	Methyl Cellosolve Acetate	-	-	-	-	-	-	-	-
74-87-3	Methyl chloride (Chlorometh	-	-	-	-	-	-	-	-
71-55-6	Methyl chloroform (1,1,1-Tri	-	-	-	-	-	-	-	-
78-93-3	Methyl ethyl ketone (2-Buta	-	-	-	-	-	-	-	-
60-34-4	Methyl Hydrazine	-	-	-	-	-	-	-	-
108-10-1	Methyl isobutyl ketone (Hex	-	-	-	-	-	-	-	-
624-83-9	Methyl isocyanate	-	-	-	-	-	-	-	-
80-62-6	Methyl methacrylate	-	-	-	-	-	-	-	-
1634-04-4	Methyl tert butyl ether	-	-	-	-	-	-	-	-
56-49-5	Methylcholanthrene, 3-	-	-	-	-	-	-	-	-
3697-24-3	Methylchrysene, 5-	-	-	-	-	-	-	-	-
101-14-4	Methylene bis(2-chloroanilin	-	-	-	-	-	-	-	-
74-95-3	Methylene Bromide	-	-	-	-	-	-	-	-
75-09-2	Methylene chloride (Dichlor	-	-	-	-	-	-	-	-
101-68-8	Methylene diphenyl diisocya	-	-	-	-	-	-	-	-
101-77-9	Methylenedianiline, 4,4-	-	-	-	-	-	-	-	-
90-94-8	Michler's ketone	-	-	-	-	-	-	-	-
10595-95-6	N- Nitrosomethylethylamine	-	-	-	-	-	-	-	-
924-16-3	N-Nitrosodi-n-butylamine	-	-	-	-	-	-	-	-
621-64-7	N-Nitrosodi-n-propylamine	-	-	-	-	-	-	-	-
55-18-5	N-Nitrosodiethylamine	-	-	-	-	-	-	-	-
62-75-9	N-Nitrosodimethylamine	-	-	-	-	-	-	-	-
86-30-6	N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-
59-89-2	N-Nitrosomorpholine	-	-	-	-	-	-	-	-
100-75-4	N-Nitrosopiperidine	-	-	-	-	-	-	-	-

111-84-2	N-Nonane	-	-	-	-	-	-	-	-
64724-95-6	Naphtha, High Flash Aroma	-	-	-	-	-	-	-	-
91-20-3	Naphthalene	-	-	-	-	-	-	-	-
193-09-9	Naphtho[2,3-e]pyrene	-	-	-	-	-	-	-	-
7440-02-0	Nickel	-	-	-	-	-	-	-	-
NICKEL-COM	Nickel Compounds	-	-	-	-	-	-	-	-
1313-99-1	Nickel oxide	-	-	-	-	-	-	-	-
0-02-5	Nickel refinery dust from the	-	-	-	-	-	-	-	-
12035-72-2	Nickel sulfide (NI3S2)	-	-	-	-	-	-	-	-
7697-37-2	Nitric acid	-	-	-	-	-	-	-	-
139-13-9	Nitrilotriacetic acid	-	-	-	-	-	-	-	-
18662-53-8	Nitrilotriacetic acid, trisodiu	-	-	-	-	-	-	-	-
602-87-9	Nitroacenaphthene, 5-	-	-	-	-	-	-	-	-
88-74-4	Nitroaniline, 2-	-	-	-	-	-	-	-	-
100-01-6	Nitroaniline, 4-	-	-	-	-	-	-	-	-
98-95-3	Nitrobenzene	-	-	-	-	-	-	-	-
7496-02-8	Nitrochrysene, 6-	-	-	-	-	-	-	-	-
607-57-8	Nitrofluorene, 2-	-	-	-	-	-	-	-	-
10102-44-0	Nitrogen dioxide (NO2)	-	-	-	-	-	-	-	-
75-52-5	Nitromethane	-	-	-	-	-	-	-	-
79-46-9	Nitropropane, 2-	-	-	-	-	-	-	-	-
5522-43-0	Nitropyrene, 1-	-	-	-	-	-	-	-	-
57835-92-4	Nitropyrene, 4-	-	-	-	-	-	-	-	-
156-10-5	Nitrosodiphenylamine, p-	-	-	-	-	-	-	-	-
3268-87-9	Octachlorodibenzo-p-dioxin,	-	-	-	-	-	-	-	-
39001-02-0	Octachlorodibenzofuran, 1,2	-	-	-	-	-	-	-	-
10028-15-6	Ozone	-	-	-	-	-	-	-	-
74472-37-0	PCB 114 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
31508-00-6	PCB 118 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
65510-44-3	PCB 123 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
57465-28-8	PCB 126 (3,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
38380-0804	PCB 156 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Hep	-	-	-	-	-	-	-	-
32598-13-3	PCB 77 (3,3,4,4-Tetrachloro	-	-	-	-	-	-	-	-
70362-50-4	PCB 81 (3,4,4,5 Tetrachloro	-	-	-	-	-	-	-	-
32598-14-4	PCB105 (2,3,3,4,4 Pentachl	-	-	-	-	-	-	-	-
40321-76-4	Pentachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-1	Pentachlorodibenzodioxins,	-	-	-	-	-	-	-	-
57117-41-6	Pentachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
57117-31-4	Pentachlorodibenzofuran, 2	-	-	-	-	-	-	-	-
00-09-0	Pentachlorodibenzofurans,	-	-	-	-	-	-	-	-
87-86-5	Pentachlorophenol	-	-	-	-	-	-	-	-
109-66-0	Pentane, n-	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
85-01-8	Phenanthrene	-	-	-	-	-	-	-	-
108-95-2	Phenol	-	-	-	-	-	-	-	-
75-44-5	Phosgene	-	-	-	-	-	-	-	-
7803-51-2	Phosphine	-	-	-	-	-	-	-	-
7664-38-2	Phosphoric acid	-	-	-	-	-	-	-	-
85-44-9	Phthalic anhydride	-	-	-	-	-	-	-	-
59536-65-1	Polybrominated Biphenyls	-	-	-	-	-	-	-	-
1336-36-3	Polychlorinated biphenyls (A	-	-	-	-	-	-	-	-
00-08-0	Polychlorinated Dibenzo-P-	-	-	-	-	-	-	-	-
00-05-0	Polychlorinated Dibenzodio	-	-	-	-	-	-	-	-
00-05-1	Polychlorinated Dibenzofura	-	-	-	-	-	-	-	-
130498-29-2	Polycyclic Aromatic Hydroca	-	-	-	-	-	-	-	-
00-01-7	Polycyclic Organic Matter (P	-	-	-	-	-	-	-	-
9016-87-9	Polymeric diphenylmethane	-	-	-	-	-	-	-	-
7758-01-2	Potassium bromate	-	-	-	-	-	-	-	-
1120-71-4	Propane sultone, 1,3-	-	-	-	-	-	-	-	-
57-57-8	Propiolactone, beta-	-	-	-	-	-	-	-	-
123-38-6	Propionaldehyde	-	-	-	-	-	-	-	-
115-07-1	Propylene	-	-	-	-	-	-	-	-
78-87-5	Propylene dichloride (1,2-Di	-	-	-	-	-	-	-	-
107-98-2	Propylene Glycol Monometh	-	-	-	-	-	-	-	-
75-56-9	Propylene oxide	-	-	-	-	-	-	-	-
930-55-2	Pyrrolidine, 1-Nitroso-	-	-	-	-	-	-	-	-
7782-49-2	Selenium	-	-	-	-	-	-	-	-
0-01-9	Selenium Compounds	-	-	-	-	-	-	-	-
7631-86-9	Silica (crystalline, respirable	-	-	-	-	-	-	-	-
1310-73-2	Sodium hydroxide	-	-	-	-	-	-	-	-
10588-01-9	Sodium Dichromate	-	-	-	-	-	-	-	-
7789-06-2	Strontium chromate	-	-	-	-	-	-	-	-
100-42-5	Styrene	-	-	-	-	-	-	-	-
96-09-3	Styrene oxide	-	-	-	-	-	-	-	-
14808-79-8	Sulfates	-	-	-	-	-	-	-	-
126-33-0	Sulfolane	-	-	-	-	-	-	-	-
7446-09-5	Sulfur dioxide	-	-	-	-	-	-	-	-
7664-93-9	Sulfuric acid (aerosol forms	-	-	-	-	-	-	-	-
8014-95-7	Sulfuric Acid mixture w. sulf	-	-	-	-	-	-	-	-
00-09-1	TCDD Eqivalents, 2,3,7,8-	-	-	-	-	-	-	-	-
540-88-5	Tert-Butyl Acetate	-	-	-	-	-	-	-	-
1746-01-6	Tetrachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-8	Tetrachlorodibenzodioxins,	-	-	-	-	-	-	-	-
51207-31-9	Tetrachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-

00-08-6	Tetrachlorodibenzofurans, A	-	-	-	-	-	-	-	-
630-20-6	Tetrachloroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
79-34-5	Tetrachloroethane, 1,1,2,2-	-	-	-	-	-	-	-	-
127-18-4	Tetrachloroethylene (Perchl	-	-	-	-	-	-	-	-
811-97-2	Tetrafluoroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
109-99-9	Tetrahydrofuran	-	-	-	-	-	-	-	-
62-55-5	Thioacetamide	-	-	-	-	-	-	-	-
62-56-6	Thiourea	-	-	-	-	-	-	-	-
108-88-3	Toluene	-	-	-	-	-	-	-	-
584-84-9	Toluene-2,4-diisocyanate	-	-	-	-	-	-	-	-
91-08-7	Toluene-2,6-diisocyanate	-	-	-	-	-	-	-	-
95-80-7	Toluene diamine, 2,4-	-	-	-	-	-	-	-	-
26471-62-5	Toluenediisocyanate (mixed	-	-	-	-	-	-	-	-
95-53-4	Toluidine, o- (Methylaniline,	-	-	-	-	-	-	-	-
8001-35-2	Toxaphene (chlorinated ca	-	-	-	-	-	-	-	-
10061-02-6	trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-
120-82-1	Trichlorobenzene, 1,2,4-	-	-	-	-	-	-	-	-
79-00-5	Trichloroethane, 1,1,2-	-	-	-	-	-	-	-	-
79-01-6	Trichloroethylene (TCE)	-	-	-	-	-	-	-	-
75-69-4	Trichlorofluoromethane (CF	-	-	-	-	-	-	-	-
88-06-2	Trichlorophenol, 2,4,6-	-	-	-	-	-	-	-	-
96-18-4	Trichloropropane, 1,2,3-	-	-	-	-	-	-	-	-
96-19-5	Trichloropropene, 1,2,3-	-	-	-	-	-	-	-	-
76-13-1	Trichlorotrifluoroethane, 1,1	-	-	-	-	-	-	-	-
121-44-8	Triethylamine	-	-	-	-	-	-	-	-
420-46-2	Trifluoroethane, 1,1,1-	-	-	-	-	-	-	-	-
526-73-8	Trimethylbenzene, 1,2,3-	-	-	-	-	-	-	-	-
95-63-6	Trimethylbenzene, 1,2,4-	-	-	-	-	-	-	-	-
108-67-8	Trimethylbenzene, 1,3,5-	-	-	-	-	-	-	-	-
URANIUM-SO	Uranium (Soluble Salts)	-	-	-	-	-	-	-	-
7440-61-1	Uranium, Insoluble Compou	-	-	-	-	-	-	-	-
7440-62-2	Vanadium and Compounds	-	-	-	-	-	-	-	-
1314-62-1	Vanadium Pentoxide, (V2O	-	-	-	-	-	-	-	-
108-05-4	Vinyl acetate	-	-	-	-	-	-	-	-
593-60-2	Vinyl bromide	-	-	-	-	-	-	-	-
75-01-4	Vinyl chloride	-	-	-	-	-	-	-	-
1330-20-7	Xylenes	-	-	-	-	-	-	-	-
108-38-3	Xylenes, m-	-	-	-	-	-	-	-	-
95-47-6	Xylenes, o-	-	-	-	-	-	-	-	-
106-42-3	Xylenes, p-	-	-	-	-	-	-	-	-
13530-65-9	Zinc chromate	-	-	-	-	-	-	-	-

RASS version: 2020-12

No inputs needed on this page

Air Concentrations in ug/m3

		Stack #18				Stack #19			
CAS# or MPCA#	**Chemical Name**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**
202-94-8	11H-Benz[b,c]aceanthrylene	-	-	-	-	-	-	-	-
202-98-2	4H-Cyclopenta[d,e,f]chrysen	-	-	-	-	-	-	-	-
75-07-0	Acetaldehyde	-	-	-	-	-	-	-	-
60-35-5	Acetamide	-	-	-	-	-	-	-	-
67-64-1	Acetone	-	-	-	-	-	-	-	-
75-86-5	Acetone Cyanohydrin	-	-	-	-	-	-	-	-
75-05-8	Acetonitrile	-	-	-	-	-	-	-	-
53-96-3	Acetylaminofluorene, 2-	-	-	-	-	-	-	-	-
107-02-8	Acrolein	-	-	-	-	-	-	-	-
79-06-1	Acrylamide	-	-	-	-	-	-	-	-
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-	-	-	-	-	-	-	-	-
79-10-7	Acrylic acid	-	-	-	-	-	-	-	-
107-13-1	Acrylonitrile	-	-	-	-	-	-	-	-
111-69-3	Adiponitrile	-	-	-	-	-	-	-	-
ALDEHYDES	Aldehydes	-	-	-	-	-	-	-	-
309-00-2	Aldrin	-	-	-	-	-	-	-	-
ALIPHATIC-M	Aliphatic Hydrocarbon Strea	-	-	-	-	-	-	-	-
107-05-1	Allyl chloride	-	-	-	-	-	-	-	-
7429-90-5	Aluminum	-	-	-	-	-	-	-	-
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3	-	-	-	-	-	-	-	-
6109-97-3	Amino-9-ethylcarbazolehydr	-	-	-	-	-	-	-	-
117-79-3	Aminoanthraquinone, 2-	-	-	-	-	-	-	-	-
7664-41-7	Ammonia	-	-	-	-	-	-	-	-
62-53-3	Aniline	-	-	-	-	-	-	-	-
191-26-4	Anthanthrene	-	-	-	-	-	-	-	-
7440-36-0	Antimony	-	-	-	-	-	-	-	-
ANTIMONY-C	Antimony Compounds	-	-	-	-	-	-	-	-
1309-64-4	Antimony trioxide	-	-	-	-	-	-	-	-
140-57-8	Aramite	-	-	-	-	-	-	-	-
7440-38-2	Arsenic	-	-	-	-	-	-	-	-
ARSENIC-CO	Arsenic Compounds	-	-	-	-	-	-	-	-
1327-53-3	Arsenic Trioxide	-	-	-	-	-	-	-	-
7784-42-1	Arsine	-	-	-	-	-	-	-	-
1332-21-4	Asbestos (units in fibers)	-	-	-	-	-	-	-	-
1332-21-4-LA	Asbestos, Libby Amphibole	-	-	-	-	-	-	-	-
123-77-3	Azodicarbonamide	-	-	-	-	-	-	-	-
10294-40-3	Barium Chromate	-	-	-	-	-	-	-	-
199-54-2	Benz[e]aceanthrylene	-	-	-	-	-	-	-	-
202-33-5	Benz[j]aceanthrylene	-	-	-	-	-	-	-	-
211-91-6	Benz[l]aceanthrylene	-	-	-	-	-	-	-	-
71-43-2	Benzene	-	-	-	-	-	-	-	-
92-87-5	Benzidine	-	-	-	-	-	-	-	-
205-82-3	Benzo(j)fluoranthene	-	-	-	-	-	-	-	-
207-08-9	Benzo(k)fluoranthene	-	-	-	-	-	-	-	-
56-55-3	Benzo[a]anthracene	-	-	-	-	-	-	-	-
50-32-8	Benzo[a]pyrene	-	-	-	-	-	-	-	-
205-99-2	Benzo[b]fluoranthene	-	-	-	-	-	-	-	-
205-12-9	Benzo[c]fluorene	-	-	-	-	-	-	-	-
191-24-2	Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-
65-85-0	Benzoic Acid	-	-	-	-	-	-	-	-
100-44-7	Benzyl chloride	-	-	-	-	-	-	-	-
7440-41-7	Beryllium	-	-	-	-	-	-	-	-
BERYLLIUM-	Beryllium Compounds	-	-	-	-	-	-	-	-
13510-49-1	Beryllium sulfate	-	-	-	-	-	-	-	-
111-44-4	Bis(2-chloroethyl)ether	-	-	-	-	-	-	-	-
117-81-7	Bis(2-ethylhexyl)phthalate (	-	-	-	-	-	-	-	-
542-88-1	Bis(chloromethyl)ether	-	-	-	-	-	-	-	-
7440-42-8	Boron And Borates Only	-	-	-	-	-	-	-	-
10294-34-5	Boron Trichloride	-	-	-	-	-	-	-	-
7637-07-2	Boron Trifluoride	-	-	-	-	-	-	-	-
108-86-1	Bromobenzene	-	-	-	-	-	-	-	-
74-97-5	Bromochloromethane	-	-	-	-	-	-	-	-
75-27-4	Bromodichloromethane	-	-	-	-	-	-	-	-
75-25-2	Bromoform	-	-	-	-	-	-	-	-
74-83-9	Bromomethane	-	-	-	-	-	-	-	-
106-94-5	Bromopropane, 1-	-	-	-	-	-	-	-	-
106-99-0	Butadiene, 1,3-	-	-	-	-	-	-	-	-
78-92-2	Butyl alcohol, sec-	-	-	-	-	-	-	-	-
111-76-2	Butyl Cellosolve (ethylene g	-	-	-	-	-	-	-	-
25013-16-5	Butylated hydroxyanisole	-	-	-	-	-	-	-	-
3068-88-0	Butyrolactone, beta-	-	-	-	-	-	-	-	-
7440-43-9	Cadmium	-	-	-	-	-	-	-	-
CADMIUM-CO	Cadmium Compounds	-	-	-	-	-	-	-	-
13765-19-0	Calcium Chromate	-	-	-	-	-	-	-	-
105-60-2	Caprolactum	-	-	-	-	-	-	-	-
75-15-0	Carbon disulfide	-	-	-	-	-	-	-	-
630-08-0	Carbon Monoxide	-	-	-	-	-	-	-	-
56-23-5	Carbon tetrachloride	-	-	-	-	-	-	-	-
463-58-1	Carbonyl sulfide	-	-	-	-	-	-	-	-
111-15-9	Cellosolve Acetate (ethylen	-	-	-	-	-	-	-	-
1306-38-3	Cerium Oxide and Cerium C	-	-	-	-	-	-	-	-
12789-03-6	Chlordane or (57-74-9)	-	-	-	-	-	-	-	-
115-28-6	Chlorendic acid	-	-	-	-	-	-	-	-
108171-26-2	Chlorinated Paraffins (C12,	-	-	-	-	-	-	-	-
7782-50-5	Chlorine	-	-	-	-	-	-	-	-

10049-04-4	Chlorine Oxide (CLO2)	-	-	-	-	-	-	-	-
75-68-3	Chloro-1,1-difluoroethane, 1	-	-	-	-	-	-	-	-
563-47-3	Chloro-2-methylpropene, 3-	-	-	-	-	-	-	-	-
95-83-0	Chloro-o-phenylenediamine	-	-	-	-	-	-	-	-
95-69-2	Chloro-o-toluidine, p-	-	-	-	-	-	-	-	-
532-27-4	Chloroacetophenone, 2-	-	-	-	-	-	-	-	-
108-90-7	Chlorobenzene	-	-	-	-	-	-	-	-
98-56-6	Chlorobenzotrifluoride, 4-	-	-	-	-	-	-	-	-
75-45-6	Chlorodifluoromethane (HC	-	-	-	-	-	-	-	-
67-66-3	Chloroform	-	-	-	-	-	-	-	-
107-30-2	Chloromethyl Methyl Ether	-	-	-	-	-	-	-	-
88-73-3	Chloronitrobenzene, o-	-	-	-	-	-	-	-	-
100-00-5	Chloronitrobenzene, p-	-	-	-	-	-	-	-	-
76-06-2	Chloropicrin	-	-	-	-	-	-	-	-
126-99-8	Chloroprene	-	-	-	-	-	-	-	-
1333-82-0	Chromic acid mists and diss	-	-	-	-	-	-	-	-
7440-47-3	Chromium	-	-	-	-	-	-	-	-
18540-29-9	Chromium (Hexavalent)	-	-	-	-	-	-	-	-
18540-29-9-p	Chromium (Hexavalent) - P	-	-	-	-	-	-	-	-
CHROM-COM	Chromium Compounds	-	-	-	-	-	-	-	-
16065-83-1	Chromium(III) Compounds	-	-	-	-	-	-	-	-
218-01-9	Chrysene (Benzo(a)phenan	-	-	-	-	-	-	-	-
87-29-6	Cinnamyl anthranilate	-	-	-	-	-	-	-	-
10061-01-5	cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-
8007-45-2	Coal Tar	-	-	-	-	-	-	-	-
7440-48-4	Cobalt	-	-	-	-	-	-	-	-
0-00-7	Coke Oven Emissions	-	-	-	-	-	-	-	-
7440-50-8	Copper	-	-	-	-	-	-	-	-
COPPER-CO	Copper Compounds	-	-	-	-	-	-	-	-
120-71-8	Cresidine, p-	-	-	-	-	-	-	-	-
108-39-4	Cresol, m-	-	-	-	-	-	-	-	-
95-48-7	Cresol, o-	-	-	-	-	-	-	-	-
106-44-5	Cresol, p-	-	-	-	-	-	-	-	-
1319-77-3	Cresols/Cresylic acid (isome	-	-	-	-	-	-	-	-
98-82-8	Cumene	-	-	-	-	-	-	-	-
135-20-6	Cupferron	-	-	-	-	-	-	-	-
57-12-5	Cyanide (Cyanide ion, Inorg	-	-	-	-	-	-	-	-
CYANIDE-CO	Cyanide Compounds	-	-	-	-	-	-	-	-
110-82-7	Cyclohexane	-	-	-	-	-	-	-	-
108-94-1	Cyclohexanone	-	-	-	-	-	-	-	-
27208-37-3	Cyclopenta[c,d]pyrene	-	-	-	-	-	-	-	-
50-29-3	DDT	-	-	-	-	-	-	-	-
615-05-4	Diaminoanisole, 2,4-	-	-	-	-	-	-	-	-
101-80-4	Diaminodiphenyl ether, 4,4-	-	-	-	-	-	-	-	-
103-33-3	Diazene, Diphenyl	-	-	-	-	-	-	-	-
226-36-8	Dibenz(a,h)acridine	-	-	-	-	-	-	-	-
224-42-0	Dibenz(a,j)acridine	-	-	-	-	-	-	-	-
53-70-3	Dibenz[a,h]anthracene	-	-	-	-	-	-	-	-
192-65-4	Dibenzo(a,e)pyrene	-	-	-	-	-	-	-	-
189-64-0	Dibenzo(a,h)pyrene	-	-	-	-	-	-	-	-
191-30-0	Dibenzo(a,l)pyrene	-	-	-	-	-	-	-	-
194-59-2	Dibenzo(c,g)carbazole, 7H-	-	-	-	-	-	-	-	-
5385-75-1	Dibenzo[a,e]fluoranthene	-	-	-	-	-	-	-	-
189-55-9	Dibenzo[a,i]pyrene	-	-	-	-	-	-	-	-
96-12-8	Dibromo-3-chloropropane, 1	-	-	-	-	-	-	-	-
764-41-0	Dichloro-2-butene, 1,4-	-	-	-	-	-	-	-	-
1476-11-5	Dichloro-2-butene, cis-1,4-	-	-	-	-	-	-	-	-
106-46-7	Dichlorobenzene(p), 1,4-	-	-	-	-	-	-	-	-
25321-22-6	Dichlorobenzenes	-	-	-	-	-	-	-	-
91-94-1	Dichlorobenzidene, 3,3-	-	-	-	-	-	-	-	-
75-71-8	Dichlorodifluoromethane (C	-	-	-	-	-	-	-	-
75-35-4	Dichloroethylene (1,1-) (Vin	-	-	-	-	-	-	-	-
156-60-5	Dichloroethylene, trans-1,2-	-	-	-	-	-	-	-	-
542-75-6	Dichloropropene, 1,3-	-	-	-	-	-	-	-	-
78-88-6	Dichloropropene, 2,3-	-	-	-	-	-	-	-	-
62-73-7	Dichlorvos	-	-	-	-	-	-	-	-
77-73-6	Dicyclopentadiene	-	-	-	-	-	-	-	-
60-57-1	Dieldrin	-	-	-	-	-	-	-	-
0-02-4	Diesel exhaust particulate	-	-	-	-	-	-	-	-
111-42-2	Diethanolamine	-	-	-	-	-	-	-	-
112-34-5	Diethylene Glycol Monobuty	-	-	-	-	-	-	-	-
111-90-0	Diethylene Glycol Monoethy	-	-	-	-	-	-	-	-
75-37-6	Difluoroethane, 1,1-	-	-	-	-	-	-	-	-
108-20-3	Diisopropyl Ether	-	-	-	-	-	-	-	-
60-11-7	Dimethyl aminoazobenzene	-	-	-	-	-	-	-	-
68-12-2	Dimethyl formamide	-	-	-	-	-	-	-	-
108-01-0	Dimethylamino ethanol, 2-	-	-	-	-	-	-	-	-
57-97-6	Dimethylbenz[a]anthracene,	-	-	-	-	-	-	-	-
57-14-7	Dimethylhydrazine, 1,1-	-	-	-	-	-	-	-	-
42397-64-8	Dinitropyrene, 1,6- (BaP)	-	-	-	-	-	-	-	-
42397-65-9	Dinitropyrene, 1,8- (BaP)	-	-	-	-	-	-	-	-
121-14-2	Dinitrotoluene, 2,4-	-	-	-	-	-	-	-	-
123-91-1	Dioxane, 1,4- (1,4-Diethylen	-	-	-	-	-	-	-	-
122-66-7	Diphenylhydrazine, 1,2-	-	-	-	-	-	-	-	-
106-89-8	Epichlorohydrin (l-Chloro-2,	-	-	-	-	-	-	-	-
106-88-7	Epoxybutane, 1,2-	-	-	-	-	-	-	-	-
110-80-5	Ethoxyethanol, 2- (ethylene	-	-	-	-	-	-	-	-
141-78-6	Ethyl acetate	-	-	-	-	-	-	-	-
140-88-5	Ethyl Acrylate	-	-	-	-	-	-	-	-
100-41-4	Ethyl benzene	-	-	-	-	-	-	-	-
51-79-6	Ethyl carbamate (Urethane)	-	-	-	-	-	-	-	-

75-00-3	Ethyl chloride (Chloroethane	-	-	-	-	-	-	-	-
97-63-2	Ethyl Methacrylate	-	-	-	-	-	-	-	-
106-93-4	Ethylene dibromide (Dibrom	-	-	-	-	-	-	-	-
107-06-2	Ethylene dichloride (1,2-Dic	-	-	-	-	-	-	-	-
107-21-1	Ethylene glycol	-	-	-	-	-	-	-	-
75-21-8	Ethylene oxide	-	-	-	-	-	-	-	-
96-45-7	Ethylene thiourea	-	-	-	-	-	-	-	-
75-34-3	Ethylidene dichloride (1,1-D	-	-	-	-	-	-	-	-
206-44-0	Fluoranthene	-	-	-	-	-	-	-	-
FLUORIDES	Fluorides (except hydrogen	-	-	-	-	-	-	-	-
50-00-0	Formaldehyde	-	-	-	-	-	-	-	-
64-18-6	Formic Acid	-	-	-	-	-	-	-	-
111-30-8	Glutaraldehyde	-	-	-	-	-	-	-	-
0-01-2	Glycol ethers	-	-	-	-	-	-	-	-
76-44-8	Heptachlor	-	-	-	-	-	-	-	-
1024-57-3	Heptachlor epoxide	-	-	-	-	-	-	-	-
35822-46-9	Heptachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-5	Heptachlorodibenzodioxin,	-	-	-	-	-	-	-	-
67562-39-4	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
55673-89-7	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
00-08-4	Heptachlorodibenzofuran, A	-	-	-	-	-	-	-	-
142-82-5	Heptane, N	-	-	-	-	-	-	-	-
118-74-1	Hexachlorobenzene	-	-	-	-	-	-	-	-
87-68-3	Hexachlorobutadiene	-	-	-	-	-	-	-	-
608-73-1	Hexachlorocyclohexane (tec	-	-	-	-	-	-	-	-
319-84-6	Hexachlorocyclohexane, alp	-	-	-	-	-	-	-	-
319-85-7	Hexachlorocyclohexane, be	-	-	-	-	-	-	-	-
77-47-4	Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-
39227-28-6	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
57653-85-7	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
19408-74-3	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-3	Hexachlorodibenzodioxins,	-	-	-	-	-	-	-	-
70648-26-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
57117-44-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
72918-21-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
60851-34-5	Hexachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-
00-08-2	Hexachlorodibenzofurans, A	-	-	-	-	-	-	-	-
67-72-1	Hexachloroethane	-	-	-	-	-	-	-	-
822-06-0	Hexamethylene-1,6-diisocya	-	-	-	-	-	-	-	-
110-54-3	Hexane	-	-	-	-	-	-	-	-
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl	-	-	-	-	-	-	-	-
591-78-6	Hexanone-2	-	-	-	-	-	-	-	-
302-01-2	Hydrazine	-	-	-	-	-	-	-	-
10034-93-2	Hydrazine sulfate	-	-	-	-	-	-	-	-
7647-01-0	Hydrochloric acid (hydrogen	-	-	-	-	-	-	-	-
74-90-8	Hydrogen cyanide	-	-	-	-	-	-	-	-
7664-39-3	Hydrogen fluoride (Hydroflu	-	-	-	-	-	-	-	-
7783-07-5	Hydrogen selenide	-	-	-	-	-	-	-	-
7783-06-4	Hydrogen sulfide	-	-	-	-	-	-	-	-
193-39-5	Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-
5888-33-5	Isobornyl acrylate	-	-	-	-	-	-	-	-
78-59-1	Isophorone	-	-	-	-	-	-	-	-
67-63-0	Isopropyl alcohol	-	-	-	-	-	-	-	-
7439-92-1	Lead	-	-	-	-	-	-	-	-
7758-97-6	Lead Chromate	-	-	-	-	-	-	-	-
LEAD-COMP	Lead Compounds	-	-	-	-	-	-	-	-
58-89-9	Lindane (all isomers)	-	-	-	-	-	-	-	-
108-31-6	Maleic anhydride	-	-	-	-	-	-	-	-
7439-96-5	Manganese	-	-	-	-	-	-	-	-
MANGANESE	Manganese Compounds	-	-	-	-	-	-	-	-
7439-97-6	Mercury (elemental)	-	-	-	-	-	-	-	-
MERCURY-C	Mercury Compounds	-	-	-	-	-	-	-	-
126-98-7	Methacrylonitrile	-	-	-	-	-	-	-	-
67-56-1	Methanol	-	-	-	-	-	-	-	-
109-86-4	Methoxyethanol, 2- (ethylen	-	-	-	-	-	-	-	-
96-33-3	Methyl acrylate	-	-	-	-	-	-	-	-
110-49-6	Methyl Cellosolve Acetate	-	-	-	-	-	-	-	-
74-87-3	Methyl chloride (Chlorometh	-	-	-	-	-	-	-	-
71-55-6	Methyl chloroform (1,1,1-Tri	-	-	-	-	-	-	-	-
78-93-3	Methyl ethyl ketone (2-Buta	-	-	-	-	-	-	-	-
60-34-4	Methyl Hydrazine	-	-	-	-	-	-	-	-
108-10-1	Methyl isobutyl ketone (Hex	-	-	-	-	-	-	-	-
624-83-9	Methyl isocyanate	-	-	-	-	-	-	-	-
80-62-6	Methyl methacrylate	-	-	-	-	-	-	-	-
1634-04-4	Methyl tert butyl ether	-	-	-	-	-	-	-	-
56-49-5	Methylcholanthrene, 3-	-	-	-	-	-	-	-	-
3697-24-3	Methylchrysene, 5-	-	-	-	-	-	-	-	-
101-14-4	Methylene bis(2-chloroanilin	-	-	-	-	-	-	-	-
74-95-3	Methylene Bromide	-	-	-	-	-	-	-	-
75-09-2	Methylene chloride (Dichlor	-	-	-	-	-	-	-	-
101-68-8	Methylene diphenyl diisocya	-	-	-	-	-	-	-	-
101-77-9	Methylenedianiline, 4,4-	-	-	-	-	-	-	-	-
90-94-8	Michler's ketone	-	-	-	-	-	-	-	-
10595-95-6	N- Nitrosomethylethylamine	-	-	-	-	-	-	-	-
924-16-3	N-Nitrosodi-n-butylamine	-	-	-	-	-	-	-	-
621-64-7	N-Nitrosodi-n-propylamine	-	-	-	-	-	-	-	-
55-18-5	N-Nitrosodiethylamine	-	-	-	-	-	-	-	-
62-75-9	N-Nitrosodimethylamine	-	-	-	-	-	-	-	-
86-30-6	N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-
59-89-2	N-Nitrosomorpholine	-	-	-	-	-	-	-	-
100-75-4	N-Nitrosopiperidine	-	-	-	-	-	-	-	-

111-84-2	N-Nonane	-	-	-	-	-	-	-	-
64724-95-6	Naphtha, High Flash Aroma	-	-	-	-	-	-	-	-
91-20-3	Naphthalene	-	-	-	-	-	-	-	-
193-09-9	Naphtho[2,3-e]pyrene	-	-	-	-	-	-	-	-
7440-02-0	Nickel	-	-	-	-	-	-	-	-
NICKEL-COM	Nickel Compounds	-	-	-	-	-	-	-	-
1313-99-1	Nickel oxide	-	-	-	-	-	-	-	-
0-02-5	Nickel refinery dust from the	-	-	-	-	-	-	-	-
12035-72-2	Nickel sulfide (NI3S2)	-	-	-	-	-	-	-	-
7697-37-2	Nitric acid	-	-	-	-	-	-	-	-
139-13-9	Nitrilotriacetic acid	-	-	-	-	-	-	-	-
18662-53-8	Nitrilotriacetic acid, trisodiu	-	-	-	-	-	-	-	-
602-87-9	Nitroacenaphthene, 5-	-	-	-	-	-	-	-	-
88-74-4	Nitroaniline, 2-	-	-	-	-	-	-	-	-
100-01-6	Nitroaniline, 4-	-	-	-	-	-	-	-	-
98-95-3	Nitrobenzene	-	-	-	-	-	-	-	-
7496-02-8	Nitrochrysene, 6-	-	-	-	-	-	-	-	-
607-57-8	Nitrofluorene, 2-	-	-	-	-	-	-	-	-
10102-44-0	Nitrogen dioxide (NO2)	-	-	-	-	-	-	-	-
75-52-5	Nitromethane	-	-	-	-	-	-	-	-
79-46-9	Nitropropane, 2-	-	-	-	-	-	-	-	-
5522-43-0	Nitropyrene, 1-	-	-	-	-	-	-	-	-
57835-92-4	Nitropyrene, 4-	-	-	-	-	-	-	-	-
156-10-5	Nitrosodiphenylamine, p-	-	-	-	-	-	-	-	-
3268-87-9	Octachlorodibenzo-p-dioxin,	-	-	-	-	-	-	-	-
39001-02-0	Octachlorodibenzofuran, 1,2	-	-	-	-	-	-	-	-
10028-15-6	Ozone	-	-	-	-	-	-	-	-
74472-37-0	PCB 114 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
31508-00-6	PCB 118 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
65510-44-3	PCB 123 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
57465-28-8	PCB 126 (3,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
38380-0804	PCB 156 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Hep	-	-	-	-	-	-	-	-
32598-13-3	PCB 77 (3,3,4,4-Tetrachloro	-	-	-	-	-	-	-	-
70362-50-4	PCB 81 (3,4,4,5 Tetrachloro	-	-	-	-	-	-	-	-
32598-14-4	PCB105 (2,3,3,4,4 Pentachl	-	-	-	-	-	-	-	-
40321-76-4	Pentachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-1	Pentachlorodibenzodioxins,	-	-	-	-	-	-	-	-
57117-41-6	Pentachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
57117-31-4	Pentachlorodibenzofuran, 2	-	-	-	-	-	-	-	-
00-09-0	Pentachlorodibenzofurans,	-	-	-	-	-	-	-	-
87-86-5	Pentachlorophenol	-	-	-	-	-	-	-	-
109-66-0	Pentane, n-	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
85-01-8	Phenanthrene	-	-	-	-	-	-	-	-
108-95-2	Phenol	-	-	-	-	-	-	-	-
75-44-5	Phosgene	-	-	-	-	-	-	-	-
7803-51-2	Phosphine	-	-	-	-	-	-	-	-
7664-38-2	Phosphoric acid	-	-	-	-	-	-	-	-
85-44-9	Phthalic anhydride	-	-	-	-	-	-	-	-
59536-65-1	Polybrominated Biphenyls	-	-	-	-	-	-	-	-
1336-36-3	Polychlorinated biphenyls (A	-	-	-	-	-	-	-	-
00-08-0	Polychlorinated Dibenzo-P-	-	-	-	-	-	-	-	-
00-05-0	Polychlorinated Dibenzodio	-	-	-	-	-	-	-	-
00-05-1	Polychlorinated Dibenzofura	-	-	-	-	-	-	-	-
130498-29-2	Polycyclic Aromatic Hydroca	-	-	-	-	-	-	-	-
00-01-7	Polycyclic Organic Matter (P	-	-	-	-	-	-	-	-
9016-87-9	Polymeric diphenylmethane	-	-	-	-	-	-	-	-
7758-01-2	Potassium bromate	-	-	-	-	-	-	-	-
1120-71-4	Propane sultone, 1,3-	-	-	-	-	-	-	-	-
57-57-8	Propiolactone, beta-	-	-	-	-	-	-	-	-
123-38-6	Propionaldehyde	-	-	-	-	-	-	-	-
115-07-1	Propylene	-	-	-	-	-	-	-	-
78-87-5	Propylene dichloride (1,2-Di	-	-	-	-	-	-	-	-
107-98-2	Propylene Glycol Monometh	-	-	-	-	-	-	-	-
75-56-9	Propylene oxide	-	-	-	-	-	-	-	-
930-55-2	Pyrrolidine, 1-Nitroso-	-	-	-	-	-	-	-	-
7782-49-2	Selenium	-	-	-	-	-	-	-	-
0-01-9	Selenium Compounds	-	-	-	-	-	-	-	-
7631-86-9	Silica (crystalline, respirable	-	-	-	-	-	-	-	-
1310-73-2	Sodium hydroxide	-	-	-	-	-	-	-	-
10588-01-9	Sodium Dichromate	-	-	-	-	-	-	-	-
7789-06-2	Strontium chromate	-	-	-	-	-	-	-	-
100-42-5	Styrene	-	-	-	-	-	-	-	-
96-09-3	Styrene oxide	-	-	-	-	-	-	-	-
14808-79-8	Sulfates	-	-	-	-	-	-	-	-
126-33-0	Sulfolane	-	-	-	-	-	-	-	-
7446-09-5	Sulfur dioxide	-	-	-	-	-	-	-	-
7664-93-9	Sulfuric acid (aerosol forms	-	-	-	-	-	-	-	-
8014-95-7	Sulfuric Acid mixture w. sulf	-	-	-	-	-	-	-	-
00-09-1	TCDD Eqivalents, 2,3,7,8-	-	-	-	-	-	-	-	-
540-88-5	Tert-Butyl Acetate	-	-	-	-	-	-	-	-
1746-01-6	Tetrachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-8	Tetrachlorodibenzodioxins,	-	-	-	-	-	-	-	-
51207-31-9	Tetrachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-

00-08-6	Tetrachlorodibenzofurans, A	-	-	-	-	-	-	-	-
630-20-6	Tetrachloroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
79-34-5	Tetrachloroethane, 1,1,2,2-	-	-	-	-	-	-	-	-
127-18-4	Tetrachloroethylene (Perchl	-	-	-	-	-	-	-	-
811-97-2	Tetrafluoroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
109-99-9	Tetrahydrofuran	-	-	-	-	-	-	-	-
62-55-5	Thioacetamide	-	-	-	-	-	-	-	-
62-56-6	Thiourea	-	-	-	-	-	-	-	-
108-88-3	Toluene	-	-	-	-	-	-	-	-
584-84-9	Toluene-2,4-diisocyanate	-	-	-	-	-	-	-	-
91-08-7	Toluene-2,6-diisocyanate	-	-	-	-	-	-	-	-
95-80-7	Toluene diamine, 2,4-	-	-	-	-	-	-	-	-
26471-62-5	Toluenediisocyanate (mixed	-	-	-	-	-	-	-	-
95-53-4	Toluidine, o- (Methylaniline,	-	-	-	-	-	-	-	-
8001-35-2	Toxaphene (chlorinated ca	-	-	-	-	-	-	-	-
10061-02-6	trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-
120-82-1	Trichlorobenzene, 1,2,4-	-	-	-	-	-	-	-	-
79-00-5	Trichloroethane, 1,1,2-	-	-	-	-	-	-	-	-
79-01-6	Trichloroethylene (TCE)	-	-	-	-	-	-	-	-
75-69-4	Trichlorofluoromethane (CF	-	-	-	-	-	-	-	-
88-06-2	Trichlorophenol, 2,4,6-	-	-	-	-	-	-	-	-
96-18-4	Trichloropropane, 1,2,3-	-	-	-	-	-	-	-	-
96-19-5	Trichloropropene, 1,2,3-	-	-	-	-	-	-	-	-
76-13-1	Trichlorotrifluoroethane, 1,1	-	-	-	-	-	-	-	-
121-44-8	Triethylamine	-	-	-	-	-	-	-	-
420-46-2	Trifluoroethane, 1,1,1-	-	-	-	-	-	-	-	-
526-73-8	Trimethylbenzene, 1,2,3-	-	-	-	-	-	-	-	-
95-63-6	Trimethylbenzene, 1,2,4-	-	-	-	-	-	-	-	-
108-67-8	Trimethylbenzene, 1,3,5-	-	-	-	-	-	-	-	-
URANIUM-SO	Uranium (Soluble Salts)	-	-	-	-	-	-	-	-
7440-61-1	Uranium, Insoluble Compou	-	-	-	-	-	-	-	-
7440-62-2	Vanadium and Compounds	-	-	-	-	-	-	-	-
1314-62-1	Vanadium Pentoxide, (V2O	-	-	-	-	-	-	-	-
108-05-4	Vinyl acetate	-	-	-	-	-	-	-	-
593-60-2	Vinyl bromide	-	-	-	-	-	-	-	-
75-01-4	Vinyl chloride	-	-	-	-	-	-	-	-
1330-20-7	Xylenes	-	-	-	-	-	-	-	-
108-38-3	Xylenes, m-	-	-	-	-	-	-	-	-
95-47-6	Xylenes, o-	-	-	-	-	-	-	-	-
106-42-3	Xylenes, p-	-	-	-	-	-	-	-	-
13530-65-9	Zinc chromate	-	-	-	-	-	-	-	-

RASS version: 2020-12

No inputs needed on this page

Air Concentrations in ug/m3

		Stack #20				Stack #21			
CAS# or MPCA#	**Chemical Name**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**
202-94-8	11H-Benz[b,c]aceanthrylene	-	-	-	-	-	-	-	-
202-98-2	4H-Cyclopenta[d,e,f]chrysen	-	-	-	-	-	-	-	-
75-07-0	Acetaldehyde	-	-	-	-	-	-	-	-
60-35-5	Acetamide	-	-	-	-	-	-	-	-
67-64-1	Acetone	-	-	-	-	-	-	-	-
75-86-5	Acetone Cyanohydrin	-	-	-	-	-	-	-	-
75-05-8	Acetonitrile	-	-	-	-	-	-	-	-
53-96-3	Acetylaminofluorene, 2-	-	-	-	-	-	-	-	-
107-02-8	Acrolein	-	-	-	-	-	-	-	-
79-06-1	Acrylamide	-	-	-	-	-	-	-	-
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-	-	-	-	-	-	-	-	-
79-10-7	Acrylic acid	-	-	-	-	-	-	-	-
107-13-1	Acrylonitrile	-	-	-	-	-	-	-	-
111-69-3	Adiponitrile	-	-	-	-	-	-	-	-
ALDEHYDES	Aldehydes	-	-	-	-	-	-	-	-
309-00-2	Aldrin	-	-	-	-	-	-	-	-
ALIPHATIC-M	Aliphatic Hydrocarbon Strea	-	-	-	-	-	-	-	-
107-05-1	Allyl chloride	-	-	-	-	-	-	-	-
7429-90-5	Aluminum	-	-	-	-	-	-	-	-
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3	-	-	-	-	-	-	-	-
6109-97-3	Amino-9-ethylcarbazolehydr	-	-	-	-	-	-	-	-
117-79-3	Aminoanthraquinone, 2-	-	-	-	-	-	-	-	-
7664-41-7	Ammonia	-	-	-	-	-	-	-	-
62-53-3	Aniline	-	-	-	-	-	-	-	-
191-26-4	Anthanthrene	-	-	-	-	-	-	-	-
7440-36-0	Antimony	-	-	-	-	-	-	-	-
ANTIMONY-C	Antimony Compounds	-	-	-	-	-	-	-	-
1309-64-4	Antimony trioxide	-	-	-	-	-	-	-	-
140-57-8	Aramite	-	-	-	-	-	-	-	-
7440-38-2	Arsenic	-	-	-	-	-	-	-	-
ARSENIC-CO	Arsenic Compounds	-	-	-	-	-	-	-	-
1327-53-3	Arsenic Trioxide	-	-	-	-	-	-	-	-
7784-42-1	Arsine	-	-	-	-	-	-	-	-
1332-21-4	Asbestos (units in fibers)	-	-	-	-	-	-	-	-
1332-21-4-LA	Asbestos, Libby Amphibole	-	-	-	-	-	-	-	-
123-77-3	Azodicarbonamide	-	-	-	-	-	-	-	-
10294-40-3	Barium Chromate	-	-	-	-	-	-	-	-
199-54-2	Benz[e]aceanthrylene	-	-	-	-	-	-	-	-
202-33-5	Benz[j]aceanthrylene	-	-	-	-	-	-	-	-
211-91-6	Benz[l]aceanthrylene	-	-	-	-	-	-	-	-
71-43-2	Benzene	-	-	-	-	-	-	-	-
92-87-5	Benzidine	-	-	-	-	-	-	-	-
205-82-3	Benzo(j)fluoranthene	-	-	-	-	-	-	-	-
207-08-9	Benzo(k)fluoranthene	-	-	-	-	-	-	-	-
56-55-3	Benzo[a]anthracene	-	-	-	-	-	-	-	-
50-32-8	Benzo[a]pyrene	-	-	-	-	-	-	-	-
205-99-2	Benzo[b]fluoranthene	-	-	-	-	-	-	-	-
205-12-9	Benzo[c]fluorene	-	-	-	-	-	-	-	-
191-24-2	Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-
65-85-0	Benzoic Acid	-	-	-	-	-	-	-	-
100-44-7	Benzyl chloride	-	-	-	-	-	-	-	-
7440-41-7	Beryllium	-	-	-	-	-	-	-	-
BERYLLIUM-	Beryllium Compounds	-	-	-	-	-	-	-	-
13510-49-1	Beryllium sulfate	-	-	-	-	-	-	-	-
111-44-4	Bis(2-chloroethyl)ether	-	-	-	-	-	-	-	-
117-81-7	Bis(2-ethylhexyl)phthalate (	-	-	-	-	-	-	-	-
542-88-1	Bis(chloromethyl)ether	-	-	-	-	-	-	-	-
7440-42-8	Boron And Borates Only	-	-	-	-	-	-	-	-
10294-34-5	Boron Trichloride	-	-	-	-	-	-	-	-
7637-07-2	Boron Trifluoride	-	-	-	-	-	-	-	-
108-86-1	Bromobenzene	-	-	-	-	-	-	-	-
74-97-5	Bromochloromethane	-	-	-	-	-	-	-	-
75-27-4	Bromodichloromethane	-	-	-	-	-	-	-	-
75-25-2	Bromoform	-	-	-	-	-	-	-	-
74-83-9	Bromomethane	-	-	-	-	-	-	-	-
106-94-5	Bromopropane, 1-	-	-	-	-	-	-	-	-
106-99-0	Butadiene, 1,3-	-	-	-	-	-	-	-	-
78-92-2	Butyl alcohol, sec-	-	-	-	-	-	-	-	-
111-76-2	Butyl Cellosolve (ethylene g	-	-	-	-	-	-	-	-
25013-16-5	Butylated hydroxyanisole	-	-	-	-	-	-	-	-
3068-88-0	Butyrolactone, beta-	-	-	-	-	-	-	-	-
7440-43-9	Cadmium	-	-	-	-	-	-	-	-
CADMIUM-CO	Cadmium Compounds	-	-	-	-	-	-	-	-
13765-19-0	Calcium Chromate	-	-	-	-	-	-	-	-
105-60-2	Caprolactum	-	-	-	-	-	-	-	-
75-15-0	Carbon disulfide	-	-	-	-	-	-	-	-
630-08-0	Carbon Monoxide	-	-	-	-	-	-	-	-
56-23-5	Carbon tetrachloride	-	-	-	-	-	-	-	-
463-58-1	Carbonyl sulfide	-	-	-	-	-	-	-	-
111-15-9	Cellosolve Acetate (ethylen	-	-	-	-	-	-	-	-
1306-38-3	Cerium Oxide and Cerium C	-	-	-	-	-	-	-	-
12789-03-6	Chlordane or (57-74-9)	-	-	-	-	-	-	-	-
115-28-6	Chlorendic acid	-	-	-	-	-	-	-	-
108171-26-2	Chlorinated Paraffins (C12,	-	-	-	-	-	-	-	-
7782-50-5	Chlorine	-	-	-	-	-	-	-	-

10049-04-4	Chlorine Oxide (CLO2)	-	-	-	-	-	-	-	-
75-68-3	Chloro-1,1-difluoroethane, 1	-	-	-	-	-	-	-	-
563-47-3	Chloro-2-methylpropene, 3-	-	-	-	-	-	-	-	-
95-83-0	Chloro-o-phenylenediamine	-	-	-	-	-	-	-	-
95-69-2	Chloro-o-toluidine, p-	-	-	-	-	-	-	-	-
532-27-4	Chloroacetophenone, 2-	-	-	-	-	-	-	-	-
108-90-7	Chlorobenzene	-	-	-	-	-	-	-	-
98-56-6	Chlorobenzotrifluoride, 4-	-	-	-	-	-	-	-	-
75-45-6	Chlorodifluoromethane (HC	-	-	-	-	-	-	-	-
67-66-3	Chloroform	-	-	-	-	-	-	-	-
107-30-2	Chloromethyl Methyl Ether	-	-	-	-	-	-	-	-
88-73-3	Chloronitrobenzene, o-	-	-	-	-	-	-	-	-
100-00-5	Chloronitrobenzene, p-	-	-	-	-	-	-	-	-
76-06-2	Chloropicrin	-	-	-	-	-	-	-	-
126-99-8	Chloroprene	-	-	-	-	-	-	-	-
1333-82-0	Chromic acid mists and diss	-	-	-	-	-	-	-	-
7440-47-3	Chromium	-	-	-	-	-	-	-	-
18540-29-9	Chromium (Hexavalent)	-	-	-	-	-	-	-	-
18540-29-9-p	Chromium (Hexavalent) - P	-	-	-	-	-	-	-	-
CHROM-COM	Chromium Compounds	-	-	-	-	-	-	-	-
16065-83-1	Chromium(III) Compounds	-	-	-	-	-	-	-	-
218-01-9	Chrysene (Benzo(a)phenan	-	-	-	-	-	-	-	-
87-29-6	Cinnamyl anthranilate	-	-	-	-	-	-	-	-
10061-01-5	cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-
8007-45-2	Coal Tar	-	-	-	-	-	-	-	-
7440-48-4	Cobalt	-	-	-	-	-	-	-	-
0-00-7	Coke Oven Emissions	-	-	-	-	-	-	-	-
7440-50-8	Copper	-	-	-	-	-	-	-	-
COPPER-CO	Copper Compounds	-	-	-	-	-	-	-	-
120-71-8	Cresidine, p-	-	-	-	-	-	-	-	-
108-39-4	Cresol, m-	-	-	-	-	-	-	-	-
95-48-7	Cresol, o-	-	-	-	-	-	-	-	-
106-44-5	Cresol, p-	-	-	-	-	-	-	-	-
1319-77-3	Cresols/Cresylic acid (isome	-	-	-	-	-	-	-	-
98-82-8	Cumene	-	-	-	-	-	-	-	-
135-20-6	Cupferron	-	-	-	-	-	-	-	-
57-12-5	Cyanide (Cyanide ion, Inorg	-	-	-	-	-	-	-	-
CYANIDE-CO	Cyanide Compounds	-	-	-	-	-	-	-	-
110-82-7	Cyclohexane	-	-	-	-	-	-	-	-
108-94-1	Cyclohexanone	-	-	-	-	-	-	-	-
27208-37-3	Cyclopenta[c,d]pyrene	-	-	-	-	-	-	-	-
50-29-3	DDT	-	-	-	-	-	-	-	-
615-05-4	Diaminoanisole, 2,4-	-	-	-	-	-	-	-	-
101-80-4	Diaminodiphenyl ether, 4,4-	-	-	-	-	-	-	-	-
103-33-3	Diazene, Diphenyl	-	-	-	-	-	-	-	-
226-36-8	Dibenz(a,h)acridine	-	-	-	-	-	-	-	-
224-42-0	Dibenz(a,j)acridine	-	-	-	-	-	-	-	-
53-70-3	Dibenz[a,h]anthracene	-	-	-	-	-	-	-	-
192-65-4	Dibenzo(a,e)pyrene	-	-	-	-	-	-	-	-
189-64-0	Dibenzo(a,h)pyrene	-	-	-	-	-	-	-	-
191-30-0	Dibenzo(a,l)pyrene	-	-	-	-	-	-	-	-
194-59-2	Dibenzo(c,g)carbazole, 7H-	-	-	-	-	-	-	-	-
5385-75-1	Dibenzo[a,e]fluoranthene	-	-	-	-	-	-	-	-
189-55-9	Dibenzo[a,i]pyrene	-	-	-	-	-	-	-	-
96-12-8	Dibromo-3-chloropropane, 1	-	-	-	-	-	-	-	-
764-41-0	Dichloro-2-butene, 1,4-	-	-	-	-	-	-	-	-
1476-11-5	Dichloro-2-butene, cis-1,4-	-	-	-	-	-	-	-	-
106-46-7	Dichlorobenzene(p), 1,4-	-	-	-	-	-	-	-	-
25321-22-6	Dichlorobenzenes	-	-	-	-	-	-	-	-
91-94-1	Dichlorobenzidene, 3,3-	-	-	-	-	-	-	-	-
75-71-8	Dichlorodifluoromethane (C	-	-	-	-	-	-	-	-
75-35-4	Dichloroethylene (1,1-) (Vin	-	-	-	-	-	-	-	-
156-60-5	Dichloroethylene, trans-1,2-	-	-	-	-	-	-	-	-
542-75-6	Dichloropropene, 1,3-	-	-	-	-	-	-	-	-
78-88-6	Dichloropropene, 2,3-	-	-	-	-	-	-	-	-
62-73-7	Dichlorvos	-	-	-	-	-	-	-	-
77-73-6	Dicyclopentadiene	-	-	-	-	-	-	-	-
60-57-1	Dieldrin	-	-	-	-	-	-	-	-
0-02-4	Diesel exhaust particulate	-	-	-	-	-	-	-	-
111-42-2	Diethanolamine	-	-	-	-	-	-	-	-
112-34-5	Diethylene Glycol Monobuty	-	-	-	-	-	-	-	-
111-90-0	Diethylene Glycol Monoethy	-	-	-	-	-	-	-	-
75-37-6	Difluoroethane, 1,1-	-	-	-	-	-	-	-	-
108-20-3	Diisopropyl Ether	-	-	-	-	-	-	-	-
60-11-7	Dimethyl aminoazobenzene	-	-	-	-	-	-	-	-
68-12-2	Dimethyl formamide	-	-	-	-	-	-	-	-
108-01-0	Dimethylamino ethanol, 2-	-	-	-	-	-	-	-	-
57-97-6	Dimethylbenz[a]anthracene,	-	-	-	-	-	-	-	-
57-14-7	Dimethylhydrazine, 1,1-	-	-	-	-	-	-	-	-
42397-64-8	Dinitropyrene, 1,6- (BaP)	-	-	-	-	-	-	-	-
42397-65-9	Dinitropyrene, 1,8- (BaP)	-	-	-	-	-	-	-	-
121-14-2	Dinitrotoluene, 2,4-	-	-	-	-	-	-	-	-
123-91-1	Dioxane, 1,4- (1,4-Diethylen	-	-	-	-	-	-	-	-
122-66-7	Diphenylhydrazine, 1,2-	-	-	-	-	-	-	-	-
106-89-8	Epichlorohydrin (l-Chloro-2,	-	-	-	-	-	-	-	-
106-88-7	Epoxybutane, 1,2-	-	-	-	-	-	-	-	-
110-80-5	Ethoxyethanol, 2- (ethylene	-	-	-	-	-	-	-	-
141-78-6	Ethyl acetate	-	-	-	-	-	-	-	-
140-88-5	Ethyl Acrylate	-	-	-	-	-	-	-	-
100-41-4	Ethyl benzene	-	-	-	-	-	-	-	-
51-79-6	Ethyl carbamate (Urethane)	-	-	-	-	-	-	-	-

75-00-3	Ethyl chloride (Chloroethane	-	-	-	-	-	-	-	-
97-63-2	Ethyl Methacrylate	-	-	-	-	-	-	-	-
106-93-4	Ethylene dibromide (Dibrom	-	-	-	-	-	-	-	-
107-06-2	Ethylene dichloride (1,2-Dic	-	-	-	-	-	-	-	-
107-21-1	Ethylene glycol	-	-	-	-	-	-	-	-
75-21-8	Ethylene oxide	-	-	-	-	-	-	-	-
96-45-7	Ethylene thiourea	-	-	-	-	-	-	-	-
75-34-3	Ethylidene dichloride (1,1-D	-	-	-	-	-	-	-	-
206-44-0	Fluoranthene	-	-	-	-	-	-	-	-
FLUORIDES	Fluorides (except hydrogen	-	-	-	-	-	-	-	-
50-00-0	Formaldehyde	-	-	-	-	-	-	-	-
64-18-6	Formic Acid	-	-	-	-	-	-	-	-
111-30-8	Glutaraldehyde	-	-	-	-	-	-	-	-
0-01-2	Glycol ethers	-	-	-	-	-	-	-	-
76-44-8	Heptachlor	-	-	-	-	-	-	-	-
1024-57-3	Heptachlor epoxide	-	-	-	-	-	-	-	-
35822-46-9	Heptachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-5	Heptachlorodibenzodioxin,	-	-	-	-	-	-	-	-
67562-39-4	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
55673-89-7	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
00-08-4	Heptachlorodibenzofuran, A	-	-	-	-	-	-	-	-
142-82-5	Heptane, N	-	-	-	-	-	-	-	-
118-74-1	Hexachlorobenzene	-	-	-	-	-	-	-	-
87-68-3	Hexachlorobutadiene	-	-	-	-	-	-	-	-
608-73-1	Hexachlorocyclohexane (tec	-	-	-	-	-	-	-	-
319-84-6	Hexachlorocyclohexane, alp	-	-	-	-	-	-	-	-
319-85-7	Hexachlorocyclohexane, be	-	-	-	-	-	-	-	-
77-47-4	Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-
39227-28-6	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
57653-85-7	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
19408-74-3	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-3	Hexachlorodibenzodioxins,	-	-	-	-	-	-	-	-
70648-26-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
57117-44-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
72918-21-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
60851-34-5	Hexachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-
00-08-2	Hexachlorodibenzofurans, A	-	-	-	-	-	-	-	-
67-72-1	Hexachloroethane	-	-	-	-	-	-	-	-
822-06-0	Hexamethylene-1,6-diisocya	-	-	-	-	-	-	-	-
110-54-3	Hexane	-	-	-	-	-	-	-	-
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl	-	-	-	-	-	-	-	-
591-78-6	Hexanone-2	-	-	-	-	-	-	-	-
302-01-2	Hydrazine	-	-	-	-	-	-	-	-
10034-93-2	Hydrazine sulfate	-	-	-	-	-	-	-	-
7647-01-0	Hydrochloric acid (hydrogen	-	-	-	-	-	-	-	-
74-90-8	Hydrogen cyanide	-	-	-	-	-	-	-	-
7664-39-3	Hydrogen fluoride (Hydroflu	-	-	-	-	-	-	-	-
7783-07-5	Hydrogen selenide	-	-	-	-	-	-	-	-
7783-06-4	Hydrogen sulfide	-	-	-	-	-	-	-	-
193-39-5	Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-
5888-33-5	Isobornyl acrylate	-	-	-	-	-	-	-	-
78-59-1	Isophorone	-	-	-	-	-	-	-	-
67-63-0	Isopropyl alcohol	-	-	-	-	-	-	-	-
7439-92-1	Lead	-	-	-	-	-	-	-	-
7758-97-6	Lead Chromate	-	-	-	-	-	-	-	-
LEAD-COMP	Lead Compounds	-	-	-	-	-	-	-	-
58-89-9	Lindane (all isomers)	-	-	-	-	-	-	-	-
108-31-6	Maleic anhydride	-	-	-	-	-	-	-	-
7439-96-5	Manganese	-	-	-	-	-	-	-	-
MANGANESE	Manganese Compounds	-	-	-	-	-	-	-	-
7439-97-6	Mercury (elemental)	-	-	-	-	-	-	-	-
MERCURY-C	Mercury Compounds	-	-	-	-	-	-	-	-
126-98-7	Methacrylonitrile	-	-	-	-	-	-	-	-
67-56-1	Methanol	-	-	-	-	-	-	-	-
109-86-4	Methoxyethanol, 2- (ethylen	-	-	-	-	-	-	-	-
96-33-3	Methyl acrylate	-	-	-	-	-	-	-	-
110-49-6	Methyl Cellosolve Acetate	-	-	-	-	-	-	-	-
74-87-3	Methyl chloride (Chlorometh	-	-	-	-	-	-	-	-
71-55-6	Methyl chloroform (1,1,1-Tri	-	-	-	-	-	-	-	-
78-93-3	Methyl ethyl ketone (2-Buta	-	-	-	-	-	-	-	-
60-34-4	Methyl Hydrazine	-	-	-	-	-	-	-	-
108-10-1	Methyl isobutyl ketone (Hex	-	-	-	-	-	-	-	-
624-83-9	Methyl isocyanate	-	-	-	-	-	-	-	-
80-62-6	Methyl methacrylate	-	-	-	-	-	-	-	-
1634-04-4	Methyl tert butyl ether	-	-	-	-	-	-	-	-
56-49-5	Methylcholanthrene, 3-	-	-	-	-	-	-	-	-
3697-24-3	Methylchrysene, 5-	-	-	-	-	-	-	-	-
101-14-4	Methylene bis(2-chloroanilin	-	-	-	-	-	-	-	-
74-95-3	Methylene Bromide	-	-	-	-	-	-	-	-
75-09-2	Methylene chloride (Dichlor	-	-	-	-	-	-	-	-
101-68-8	Methylene diphenyl diisocya	-	-	-	-	-	-	-	-
101-77-9	Methylenedianiline, 4,4-	-	-	-	-	-	-	-	-
90-94-8	Michler's ketone	-	-	-	-	-	-	-	-
10595-95-6	N- Nitrosomethylethylamine	-	-	-	-	-	-	-	-
924-16-3	N-Nitrosodi-n-butylamine	-	-	-	-	-	-	-	-
621-64-7	N-Nitrosodi-n-propylamine	-	-	-	-	-	-	-	-
55-18-5	N-Nitrosodiethylamine	-	-	-	-	-	-	-	-
62-75-9	N-Nitrosodimethylamine	-	-	-	-	-	-	-	-
86-30-6	N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-
59-89-2	N-Nitrosomorpholine	-	-	-	-	-	-	-	-
100-75-4	N-Nitrosopiperidine	-	-	-	-	-	-	-	-

111-84-2	N-Nonane	-	-	-	-	-	-	-	-
64724-95-6	Naphtha, High Flash Aroma	-	-	-	-	-	-	-	-
91-20-3	Naphthalene	-	-	-	-	-	-	-	-
193-09-9	Naphtho[2,3-e]pyrene	-	-	-	-	-	-	-	-
7440-02-0	Nickel	-	-	-	-	-	-	-	-
NICKEL-COM	Nickel Compounds	-	-	-	-	-	-	-	-
1313-99-1	Nickel oxide	-	-	-	-	-	-	-	-
0-02-5	Nickel refinery dust from the	-	-	-	-	-	-	-	-
12035-72-2	Nickel sulfide (NI3S2)	-	-	-	-	-	-	-	-
7697-37-2	Nitric acid	-	-	-	-	-	-	-	-
139-13-9	Nitrilotriacetic acid	-	-	-	-	-	-	-	-
18662-53-8	Nitrilotriacetic acid, trisodiu	-	-	-	-	-	-	-	-
602-87-9	Nitroacenaphthene, 5-	-	-	-	-	-	-	-	-
88-74-4	Nitroaniline, 2-	-	-	-	-	-	-	-	-
100-01-6	Nitroaniline, 4-	-	-	-	-	-	-	-	-
98-95-3	Nitrobenzene	-	-	-	-	-	-	-	-
7496-02-8	Nitrochrysene, 6-	-	-	-	-	-	-	-	-
607-57-8	Nitrofluorene, 2-	-	-	-	-	-	-	-	-
10102-44-0	Nitrogen dioxide (NO2)	-	-	-	-	-	-	-	-
75-52-5	Nitromethane	-	-	-	-	-	-	-	-
79-46-9	Nitropropane, 2-	-	-	-	-	-	-	-	-
5522-43-0	Nitropyrene, 1-	-	-	-	-	-	-	-	-
57835-92-4	Nitropyrene, 4-	-	-	-	-	-	-	-	-
156-10-5	Nitrosodiphenylamine, p-	-	-	-	-	-	-	-	-
3268-87-9	Octachlorodibenzo-p-dioxin,	-	-	-	-	-	-	-	-
39001-02-0	Octachlorodibenzofuran, 1,2	-	-	-	-	-	-	-	-
10028-15-6	Ozone	-	-	-	-	-	-	-	-
74472-37-0	PCB 114 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
31508-00-6	PCB 118 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
65510-44-3	PCB 123 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
57465-28-8	PCB 126 (3,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
38380-0804	PCB 156 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Hep	-	-	-	-	-	-	-	-
32598-13-3	PCB 77 (3,3,4,4-Tetrachloro	-	-	-	-	-	-	-	-
70362-50-4	PCB 81 (3,4,4,5 Tetrachloro	-	-	-	-	-	-	-	-
32598-14-4	PCB105 (2,3,3,4,4 Pentachl	-	-	-	-	-	-	-	-
40321-76-4	Pentachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-1	Pentachlorodibenzodioxins,	-	-	-	-	-	-	-	-
57117-41-6	Pentachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
57117-31-4	Pentachlorodibenzofuran, 2	-	-	-	-	-	-	-	-
00-09-0	Pentachlorodibenzofurans,	-	-	-	-	-	-	-	-
87-86-5	Pentachlorophenol	-	-	-	-	-	-	-	-
109-66-0	Pentane, n-	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
85-01-8	Phenanthrene	-	-	-	-	-	-	-	-
108-95-2	Phenol	-	-	-	-	-	-	-	-
75-44-5	Phosgene	-	-	-	-	-	-	-	-
7803-51-2	Phosphine	-	-	-	-	-	-	-	-
7664-38-2	Phosphoric acid	-	-	-	-	-	-	-	-
85-44-9	Phthalic anhydride	-	-	-	-	-	-	-	-
59536-65-1	Polybrominated Biphenyls	-	-	-	-	-	-	-	-
1336-36-3	Polychlorinated biphenyls (A	-	-	-	-	-	-	-	-
00-08-0	Polychlorinated Dibenzo-P-	-	-	-	-	-	-	-	-
00-05-0	Polychlorinated Dibenzodio	-	-	-	-	-	-	-	-
00-05-1	Polychlorinated Dibenzofura	-	-	-	-	-	-	-	-
130498-29-2	Polycyclic Aromatic Hydroca	-	-	-	-	-	-	-	-
00-01-7	Polycyclic Organic Matter (P	-	-	-	-	-	-	-	-
9016-87-9	Polymeric diphenylmethane	-	-	-	-	-	-	-	-
7758-01-2	Potassium bromate	-	-	-	-	-	-	-	-
1120-71-4	Propane sultone, 1,3-	-	-	-	-	-	-	-	-
57-57-8	Propiolactone, beta-	-	-	-	-	-	-	-	-
123-38-6	Propionaldehyde	-	-	-	-	-	-	-	-
115-07-1	Propylene	-	-	-	-	-	-	-	-
78-87-5	Propylene dichloride (1,2-Di	-	-	-	-	-	-	-	-
107-98-2	Propylene Glycol Monometh	-	-	-	-	-	-	-	-
75-56-9	Propylene oxide	-	-	-	-	-	-	-	-
930-55-2	Pyrrolidine, 1-Nitroso-	-	-	-	-	-	-	-	-
7782-49-2	Selenium	-	-	-	-	-	-	-	-
0-01-9	Selenium Compounds	-	-	-	-	-	-	-	-
7631-86-9	Silica (crystalline, respirable	-	-	-	-	-	-	-	-
1310-73-2	Sodium hydroxide	-	-	-	-	-	-	-	-
10588-01-9	Sodium Dichromate	-	-	-	-	-	-	-	-
7789-06-2	Strontium chromate	-	-	-	-	-	-	-	-
100-42-5	Styrene	-	-	-	-	-	-	-	-
96-09-3	Styrene oxide	-	-	-	-	-	-	-	-
14808-79-8	Sulfates	-	-	-	-	-	-	-	-
126-33-0	Sulfolane	-	-	-	-	-	-	-	-
7446-09-5	Sulfur dioxide	-	-	-	-	-	-	-	-
7664-93-9	Sulfuric acid (aerosol forms	-	-	-	-	-	-	-	-
8014-95-7	Sulfuric Acid mixture w. sulf	-	-	-	-	-	-	-	-
00-09-1	TCDD Eqivalents, 2,3,7,8-	-	-	-	-	-	-	-	-
540-88-5	Tert-Butyl Acetate	-	-	-	-	-	-	-	-
1746-01-6	Tetrachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-8	Tetrachlorodibenzodioxins,	-	-	-	-	-	-	-	-
51207-31-9	Tetrachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-

00-08-6	Tetrachlorodibenzofurans, A	-	-	-	-	-	-	-	-
630-20-6	Tetrachloroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
79-34-5	Tetrachloroethane, 1,1,2,2-	-	-	-	-	-	-	-	-
127-18-4	Tetrachloroethylene (Perchl	-	-	-	-	-	-	-	-
811-97-2	Tetrafluoroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
109-99-9	Tetrahydrofuran	-	-	-	-	-	-	-	-
62-55-5	Thioacetamide	-	-	-	-	-	-	-	-
62-56-6	Thiourea	-	-	-	-	-	-	-	-
108-88-3	Toluene	-	-	-	-	-	-	-	-
584-84-9	Toluene-2,4-diisocyanate	-	-	-	-	-	-	-	-
91-08-7	Toluene-2,6-diisocyanate	-	-	-	-	-	-	-	-
95-80-7	Toluene diamine, 2,4-	-	-	-	-	-	-	-	-
26471-62-5	Toluenediisocyanate (mixed	-	-	-	-	-	-	-	-
95-53-4	Toluidine, o- (Methylaniline,	-	-	-	-	-	-	-	-
8001-35-2	Toxaphene (chlorinated ca	-	-	-	-	-	-	-	-
10061-02-6	trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-
120-82-1	Trichlorobenzene, 1,2,4-	-	-	-	-	-	-	-	-
79-00-5	Trichloroethane, 1,1,2-	-	-	-	-	-	-	-	-
79-01-6	Trichloroethylene (TCE)	-	-	-	-	-	-	-	-
75-69-4	Trichlorofluoromethane (CF	-	-	-	-	-	-	-	-
88-06-2	Trichlorophenol, 2,4,6-	-	-	-	-	-	-	-	-
96-18-4	Trichloropropane, 1,2,3-	-	-	-	-	-	-	-	-
96-19-5	Trichloropropene, 1,2,3-	-	-	-	-	-	-	-	-
76-13-1	Trichlorotrifluoroethane, 1,1	-	-	-	-	-	-	-	-
121-44-8	Triethylamine	-	-	-	-	-	-	-	-
420-46-2	Trifluoroethane, 1,1,1-	-	-	-	-	-	-	-	-
526-73-8	Trimethylbenzene, 1,2,3-	-	-	-	-	-	-	-	-
95-63-6	Trimethylbenzene, 1,2,4-	-	-	-	-	-	-	-	-
108-67-8	Trimethylbenzene, 1,3,5-	-	-	-	-	-	-	-	-
URANIUM-SO	Uranium (Soluble Salts)	-	-	-	-	-	-	-	-
7440-61-1	Uranium, Insoluble Compou	-	-	-	-	-	-	-	-
7440-62-2	Vanadium and Compounds	-	-	-	-	-	-	-	-
1314-62-1	Vanadium Pentoxide, (V2O	-	-	-	-	-	-	-	-
108-05-4	Vinyl acetate	-	-	-	-	-	-	-	-
593-60-2	Vinyl bromide	-	-	-	-	-	-	-	-
75-01-4	Vinyl chloride	-	-	-	-	-	-	-	-
1330-20-7	Xylenes	-	-	-	-	-	-	-	-
108-38-3	Xylenes, m-	-	-	-	-	-	-	-	-
95-47-6	Xylenes, o-	-	-	-	-	-	-	-	-
106-42-3	Xylenes, p-	-	-	-	-	-	-	-	-
13530-65-9	Zinc chromate	-	-	-	-	-	-	-	-

RASS version: 2020-12

No inputs needed on this page

Air Concentrations in ug/m3

		Stack #22				Stack #23			
CAS# or MPCA#	**Chemical Name**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**
202-94-8	11H-Benz[b,c]aceanthrylene	-	-	-	-	-	-	-	-
202-98-2	4H-Cyclopenta[d,e,f]chrysen	-	-	-	-	-	-	-	-
75-07-0	Acetaldehyde	-	-	-	-	-	-	-	-
60-35-5	Acetamide	-	-	-	-	-	-	-	-
67-64-1	Acetone	-	-	-	-	-	-	-	-
75-86-5	Acetone Cyanohydrin	-	-	-	-	-	-	-	-
75-05-8	Acetonitrile	-	-	-	-	-	-	-	-
53-96-3	Acetylaminofluorene, 2-	-	-	-	-	-	-	-	-
107-02-8	Acrolein	-	-	-	-	-	-	-	-
79-06-1	Acrylamide	-	-	-	-	-	-	-	-
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-	-	-	-	-	-	-	-	-
79-10-7	Acrylic acid	-	-	-	-	-	-	-	-
107-13-1	Acrylonitrile	-	-	-	-	-	-	-	-
111-69-3	Adiponitrile	-	-	-	-	-	-	-	-
ALDEHYDES	Aldehydes	-	-	-	-	-	-	-	-
309-00-2	Aldrin	-	-	-	-	-	-	-	-
ALIPHATIC-M	Aliphatic Hydrocarbon Strea	-	-	-	-	-	-	-	-
107-05-1	Allyl chloride	-	-	-	-	-	-	-	-
7429-90-5	Aluminum	-	-	-	-	-	-	-	-
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3	-	-	-	-	-	-	-	-
6109-97-3	Amino-9-ethylcarbazolehydr	-	-	-	-	-	-	-	-
117-79-3	Aminoanthraquinone, 2-	-	-	-	-	-	-	-	-
7664-41-7	Ammonia	-	-	-	-	-	-	-	-
62-53-3	Aniline	-	-	-	-	-	-	-	-
191-26-4	Anthanthrene	-	-	-	-	-	-	-	-
7440-36-0	Antimony	-	-	-	-	-	-	-	-
ANTIMONY-C	Antimony Compounds	-	-	-	-	-	-	-	-
1309-64-4	Antimony trioxide	-	-	-	-	-	-	-	-
140-57-8	Aramite	-	-	-	-	-	-	-	-
7440-38-2	Arsenic	-	-	-	-	-	-	-	-
ARSENIC-CO	Arsenic Compounds	-	-	-	-	-	-	-	-
1327-53-3	Arsenic Trioxide	-	-	-	-	-	-	-	-
7784-42-1	Arsine	-	-	-	-	-	-	-	-
1332-21-4	Asbestos (units in fibers)	-	-	-	-	-	-	-	-
1332-21-4-LA	Asbestos, Libby Amphibole	-	-	-	-	-	-	-	-
123-77-3	Azodicarbonamide	-	-	-	-	-	-	-	-
10294-40-3	Barium Chromate	-	-	-	-	-	-	-	-
199-54-2	Benz[e]aceanthrylene	-	-	-	-	-	-	-	-
202-33-5	Benz[j]aceanthrylene	-	-	-	-	-	-	-	-
211-91-6	Benz[l]aceanthrylene	-	-	-	-	-	-	-	-
71-43-2	Benzene	-	-	-	-	-	-	-	-
92-87-5	Benzidine	-	-	-	-	-	-	-	-
205-82-3	Benzo(j)fluoranthene	-	-	-	-	-	-	-	-
207-08-9	Benzo(k)fluoranthene	-	-	-	-	-	-	-	-
56-55-3	Benzo[a]anthracene	-	-	-	-	-	-	-	-
50-32-8	Benzo[a]pyrene	-	-	-	-	-	-	-	-
205-99-2	Benzo[b]fluoranthene	-	-	-	-	-	-	-	-
205-12-9	Benzo[c]fluorene	-	-	-	-	-	-	-	-
191-24-2	Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-
65-85-0	Benzoic Acid	-	-	-	-	-	-	-	-
100-44-7	Benzyl chloride	-	-	-	-	-	-	-	-
7440-41-7	Beryllium	-	-	-	-	-	-	-	-
BERYLLIUM-	Beryllium Compounds	-	-	-	-	-	-	-	-
13510-49-1	Beryllium sulfate	-	-	-	-	-	-	-	-
111-44-4	Bis(2-chloroethyl)ether	-	-	-	-	-	-	-	-
117-81-7	Bis(2-ethylhexyl)phthalate (	-	-	-	-	-	-	-	-
542-88-1	Bis(chloromethyl)ether	-	-	-	-	-	-	-	-
7440-42-8	Boron And Borates Only	-	-	-	-	-	-	-	-
10294-34-5	Boron Trichloride	-	-	-	-	-	-	-	-
7637-07-2	Boron Trifluoride	-	-	-	-	-	-	-	-
108-86-1	Bromobenzene	-	-	-	-	-	-	-	-
74-97-5	Bromochloromethane	-	-	-	-	-	-	-	-
75-27-4	Bromodichloromethane	-	-	-	-	-	-	-	-
75-25-2	Bromoform	-	-	-	-	-	-	-	-
74-83-9	Bromomethane	-	-	-	-	-	-	-	-
106-94-5	Bromopropane, 1-	-	-	-	-	-	-	-	-
106-99-0	Butadiene, 1,3-	-	-	-	-	-	-	-	-
78-92-2	Butyl alcohol, sec-	-	-	-	-	-	-	-	-
111-76-2	Butyl Cellosolve (ethylene g	-	-	-	-	-	-	-	-
25013-16-5	Butylated hydroxyanisole	-	-	-	-	-	-	-	-
3068-88-0	Butyrolactone, beta-	-	-	-	-	-	-	-	-
7440-43-9	Cadmium	-	-	-	-	-	-	-	-
CADMIUM-CO	Cadmium Compounds	-	-	-	-	-	-	-	-
13765-19-0	Calcium Chromate	-	-	-	-	-	-	-	-
105-60-2	Caprolactum	-	-	-	-	-	-	-	-
75-15-0	Carbon disulfide	-	-	-	-	-	-	-	-
630-08-0	Carbon Monoxide	-	-	-	-	-	-	-	-
56-23-5	Carbon tetrachloride	-	-	-	-	-	-	-	-
463-58-1	Carbonyl sulfide	-	-	-	-	-	-	-	-
111-15-9	Cellosolve Acetate (ethylen	-	-	-	-	-	-	-	-
1306-38-3	Cerium Oxide and Cerium C	-	-	-	-	-	-	-	-
12789-03-6	Chlordane or (57-74-9)	-	-	-	-	-	-	-	-
115-28-6	Chlorendic acid	-	-	-	-	-	-	-	-
108171-26-2	Chlorinated Paraffins (C12,	-	-	-	-	-	-	-	-
7782-50-5	Chlorine	-	-	-	-	-	-	-	-

10049-04-4	Chlorine Oxide (CLO2)	-	-	-	-	-	-	-	-
75-68-3	Chloro-1,1-difluoroethane, 1	-	-	-	-	-	-	-	-
563-47-3	Chloro-2-methylpropene, 3-	-	-	-	-	-	-	-	-
95-83-0	Chloro-o-phenylenediamine	-	-	-	-	-	-	-	-
95-69-2	Chloro-o-toluidine, p-	-	-	-	-	-	-	-	-
532-27-4	Chloroacetophenone, 2-	-	-	-	-	-	-	-	-
108-90-7	Chlorobenzene	-	-	-	-	-	-	-	-
98-56-6	Chlorobenzotrifluoride, 4-	-	-	-	-	-	-	-	-
75-45-6	Chlorodifluoromethane (HC	-	-	-	-	-	-	-	-
67-66-3	Chloroform	-	-	-	-	-	-	-	-
107-30-2	Chloromethyl Methyl Ether	-	-	-	-	-	-	-	-
88-73-3	Chloronitrobenzene, o-	-	-	-	-	-	-	-	-
100-00-5	Chloronitrobenzene, p-	-	-	-	-	-	-	-	-
76-06-2	Chloropicrin	-	-	-	-	-	-	-	-
126-99-8	Chloroprene	-	-	-	-	-	-	-	-
1333-82-0	Chromic acid mists and diss	-	-	-	-	-	-	-	-
7440-47-3	Chromium	-	-	-	-	-	-	-	-
18540-29-9	Chromium (Hexavalent)	-	-	-	-	-	-	-	-
18540-29-9-p	Chromium (Hexavalent) - P	-	-	-	-	-	-	-	-
CHROM-COM	Chromium Compounds	-	-	-	-	-	-	-	-
16065-83-1	Chromium(III) Compounds	-	-	-	-	-	-	-	-
218-01-9	Chrysene (Benzo(a)phenan	-	-	-	-	-	-	-	-
87-29-6	Cinnamyl anthranilate	-	-	-	-	-	-	-	-
10061-01-5	cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-
8007-45-2	Coal Tar	-	-	-	-	-	-	-	-
7440-48-4	Cobalt	-	-	-	-	-	-	-	-
0-00-7	Coke Oven Emissions	-	-	-	-	-	-	-	-
7440-50-8	Copper	-	-	-	-	-	-	-	-
COPPER-CO	Copper Compounds	-	-	-	-	-	-	-	-
120-71-8	Cresidine, p-	-	-	-	-	-	-	-	-
108-39-4	Cresol, m-	-	-	-	-	-	-	-	-
95-48-7	Cresol, o-	-	-	-	-	-	-	-	-
106-44-5	Cresol, p-	-	-	-	-	-	-	-	-
1319-77-3	Cresols/Cresylic acid (isome	-	-	-	-	-	-	-	-
98-82-8	Cumene	-	-	-	-	-	-	-	-
135-20-6	Cupferron	-	-	-	-	-	-	-	-
57-12-5	Cyanide (Cyanide ion, Inorg	-	-	-	-	-	-	-	-
CYANIDE-CO	Cyanide Compounds	-	-	-	-	-	-	-	-
110-82-7	Cyclohexane	-	-	-	-	-	-	-	-
108-94-1	Cyclohexanone	-	-	-	-	-	-	-	-
27208-37-3	Cyclopenta[c,d]pyrene	-	-	-	-	-	-	-	-
50-29-3	DDT	-	-	-	-	-	-	-	-
615-05-4	Diaminoanisole, 2,4-	-	-	-	-	-	-	-	-
101-80-4	Diaminodiphenyl ether, 4,4-	-	-	-	-	-	-	-	-
103-33-3	Diazene, Diphenyl	-	-	-	-	-	-	-	-
226-36-8	Dibenz(a,h)acridine	-	-	-	-	-	-	-	-
224-42-0	Dibenz(a,j)acridine	-	-	-	-	-	-	-	-
53-70-3	Dibenz[a,h]anthracene	-	-	-	-	-	-	-	-
192-65-4	Dibenzo(a,e)pyrene	-	-	-	-	-	-	-	-
189-64-0	Dibenzo(a,h)pyrene	-	-	-	-	-	-	-	-
191-30-0	Dibenzo(a,l)pyrene	-	-	-	-	-	-	-	-
194-59-2	Dibenzo(c,g)carbazole, 7H-	-	-	-	-	-	-	-	-
5385-75-1	Dibenzo[a,e]fluoranthene	-	-	-	-	-	-	-	-
189-55-9	Dibenzo[a,i]pyrene	-	-	-	-	-	-	-	-
96-12-8	Dibromo-3-chloropropane, 1	-	-	-	-	-	-	-	-
764-41-0	Dichloro-2-butene, 1,4-	-	-	-	-	-	-	-	-
1476-11-5	Dichloro-2-butene, cis-1,4-	-	-	-	-	-	-	-	-
106-46-7	Dichlorobenzene(p), 1,4-	-	-	-	-	-	-	-	-
25321-22-6	Dichlorobenzenes	-	-	-	-	-	-	-	-
91-94-1	Dichlorobenzidene, 3,3-	-	-	-	-	-	-	-	-
75-71-8	Dichlorodifluoromethane (C	-	-	-	-	-	-	-	-
75-35-4	Dichloroethylene (1,1-) (Vin	-	-	-	-	-	-	-	-
156-60-5	Dichloroethylene, trans-1,2-	-	-	-	-	-	-	-	-
542-75-6	Dichloropropene, 1,3-	-	-	-	-	-	-	-	-
78-88-6	Dichloropropene, 2,3-	-	-	-	-	-	-	-	-
62-73-7	Dichlorvos	-	-	-	-	-	-	-	-
77-73-6	Dicyclopentadiene	-	-	-	-	-	-	-	-
60-57-1	Dieldrin	-	-	-	-	-	-	-	-
0-02-4	Diesel exhaust particulate	-	-	-	-	-	-	-	-
111-42-2	Diethanolamine	-	-	-	-	-	-	-	-
112-34-5	Diethylene Glycol Monobuty	-	-	-	-	-	-	-	-
111-90-0	Diethylene Glycol Monoethy	-	-	-	-	-	-	-	-
75-37-6	Difluoroethane, 1,1-	-	-	-	-	-	-	-	-
108-20-3	Diisopropyl Ether	-	-	-	-	-	-	-	-
60-11-7	Dimethyl aminoazobenzene	-	-	-	-	-	-	-	-
68-12-2	Dimethyl formamide	-	-	-	-	-	-	-	-
108-01-0	Dimethylamino ethanol, 2-	-	-	-	-	-	-	-	-
57-97-6	Dimethylbenz[a]anthracene,	-	-	-	-	-	-	-	-
57-14-7	Dimethylhydrazine, 1,1-	-	-	-	-	-	-	-	-
42397-64-8	Dinitropyrene, 1,6- (BaP)	-	-	-	-	-	-	-	-
42397-65-9	Dinitropyrene, 1,8- (BaP)	-	-	-	-	-	-	-	-
121-14-2	Dinitrotoluene, 2,4-	-	-	-	-	-	-	-	-
123-91-1	Dioxane, 1,4- (1,4-Diethylen	-	-	-	-	-	-	-	-
122-66-7	Diphenylhydrazine, 1,2-	-	-	-	-	-	-	-	-
106-89-8	Epichlorohydrin (l-Chloro-2,	-	-	-	-	-	-	-	-
106-88-7	Epoxybutane, 1,2-	-	-	-	-	-	-	-	-
110-80-5	Ethoxyethanol, 2- (ethylene	-	-	-	-	-	-	-	-
141-78-6	Ethyl acetate	-	-	-	-	-	-	-	-
140-88-5	Ethyl Acrylate	-	-	-	-	-	-	-	-
100-41-4	Ethyl benzene	-	-	-	-	-	-	-	-
51-79-6	Ethyl carbamate (Urethane)	-	-	-	-	-	-	-	-

75-00-3	Ethyl chloride (Chloroethane	-	-	-	-	-	-	-	-
97-63-2	Ethyl Methacrylate	-	-	-	-	-	-	-	-
106-93-4	Ethylene dibromide (Dibrom	-	-	-	-	-	-	-	-
107-06-2	Ethylene dichloride (1,2-Dic	-	-	-	-	-	-	-	-
107-21-1	Ethylene glycol	-	-	-	-	-	-	-	-
75-21-8	Ethylene oxide	-	-	-	-	-	-	-	-
96-45-7	Ethylene thiourea	-	-	-	-	-	-	-	-
75-34-3	Ethylidene dichloride (1,1-D	-	-	-	-	-	-	-	-
206-44-0	Fluoranthene	-	-	-	-	-	-	-	-
FLUORIDES	Fluorides (except hydrogen	-	-	-	-	-	-	-	-
50-00-0	Formaldehyde	-	-	-	-	-	-	-	-
64-18-6	Formic Acid	-	-	-	-	-	-	-	-
111-30-8	Glutaraldehyde	-	-	-	-	-	-	-	-
0-01-2	Glycol ethers	-	-	-	-	-	-	-	-
76-44-8	Heptachlor	-	-	-	-	-	-	-	-
1024-57-3	Heptachlor epoxide	-	-	-	-	-	-	-	-
35822-46-9	Heptachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-5	Heptachlorodibenzodioxin,	-	-	-	-	-	-	-	-
67562-39-4	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
55673-89-7	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
00-08-4	Heptachlorodibenzofuran, A	-	-	-	-	-	-	-	-
142-82-5	Heptane, N	-	-	-	-	-	-	-	-
118-74-1	Hexachlorobenzene	-	-	-	-	-	-	-	-
87-68-3	Hexachlorobutadiene	-	-	-	-	-	-	-	-
608-73-1	Hexachlorocyclohexane (tec	-	-	-	-	-	-	-	-
319-84-6	Hexachlorocyclohexane, alp	-	-	-	-	-	-	-	-
319-85-7	Hexachlorocyclohexane, be	-	-	-	-	-	-	-	-
77-47-4	Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-
39227-28-6	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
57653-85-7	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
19408-74-3	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-3	Hexachlorodibenzodioxins,	-	-	-	-	-	-	-	-
70648-26-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
57117-44-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
72918-21-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
60851-34-5	Hexachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-
00-08-2	Hexachlorodibenzofurans, A	-	-	-	-	-	-	-	-
67-72-1	Hexachloroethane	-	-	-	-	-	-	-	-
822-06-0	Hexamethylene-1,6-diisocya	-	-	-	-	-	-	-	-
110-54-3	Hexane	-	-	-	-	-	-	-	-
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl	-	-	-	-	-	-	-	-
591-78-6	Hexanone-2	-	-	-	-	-	-	-	-
302-01-2	Hydrazine	-	-	-	-	-	-	-	-
10034-93-2	Hydrazine sulfate	-	-	-	-	-	-	-	-
7647-01-0	Hydrochloric acid (hydrogen	-	-	-	-	-	-	-	-
74-90-8	Hydrogen cyanide	-	-	-	-	-	-	-	-
7664-39-3	Hydrogen fluoride (Hydroflu	-	-	-	-	-	-	-	-
7783-07-5	Hydrogen selenide	-	-	-	-	-	-	-	-
7783-06-4	Hydrogen sulfide	-	-	-	-	-	-	-	-
193-39-5	Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-
5888-33-5	Isobornyl acrylate	-	-	-	-	-	-	-	-
78-59-1	Isophorone	-	-	-	-	-	-	-	-
67-63-0	Isopropyl alcohol	-	-	-	-	-	-	-	-
7439-92-1	Lead	-	-	-	-	-	-	-	-
7758-97-6	Lead Chromate	-	-	-	-	-	-	-	-
LEAD-COMP	Lead Compounds	-	-	-	-	-	-	-	-
58-89-9	Lindane (all isomers)	-	-	-	-	-	-	-	-
108-31-6	Maleic anhydride	-	-	-	-	-	-	-	-
7439-96-5	Manganese	-	-	-	-	-	-	-	-
MANGANESE	Manganese Compounds	-	-	-	-	-	-	-	-
7439-97-6	Mercury (elemental)	-	-	-	-	-	-	-	-
MERCURY-C	Mercury Compounds	-	-	-	-	-	-	-	-
126-98-7	Methacrylonitrile	-	-	-	-	-	-	-	-
67-56-1	Methanol	-	-	-	-	-	-	-	-
109-86-4	Methoxyethanol, 2- (ethylen	-	-	-	-	-	-	-	-
96-33-3	Methyl acrylate	-	-	-	-	-	-	-	-
110-49-6	Methyl Cellosolve Acetate	-	-	-	-	-	-	-	-
74-87-3	Methyl chloride (Chlorometh	-	-	-	-	-	-	-	-
71-55-6	Methyl chloroform (1,1,1-Tri	-	-	-	-	-	-	-	-
78-93-3	Methyl ethyl ketone (2-Buta	-	-	-	-	-	-	-	-
60-34-4	Methyl Hydrazine	-	-	-	-	-	-	-	-
108-10-1	Methyl isobutyl ketone (Hex	-	-	-	-	-	-	-	-
624-83-9	Methyl isocyanate	-	-	-	-	-	-	-	-
80-62-6	Methyl methacrylate	-	-	-	-	-	-	-	-
1634-04-4	Methyl tert butyl ether	-	-	-	-	-	-	-	-
56-49-5	Methylcholanthrene, 3-	-	-	-	-	-	-	-	-
3697-24-3	Methylchrysene, 5-	-	-	-	-	-	-	-	-
101-14-4	Methylene bis(2-chloroanilin	-	-	-	-	-	-	-	-
74-95-3	Methylene Bromide	-	-	-	-	-	-	-	-
75-09-2	Methylene chloride (Dichlor	-	-	-	-	-	-	-	-
101-68-8	Methylene diphenyl diisocya	-	-	-	-	-	-	-	-
101-77-9	Methylenedianiline, 4,4-	-	-	-	-	-	-	-	-
90-94-8	Michler's ketone	-	-	-	-	-	-	-	-
10595-95-6	N- Nitrosomethylethylamine	-	-	-	-	-	-	-	-
924-16-3	N-Nitrosodi-n-butylamine	-	-	-	-	-	-	-	-
621-64-7	N-Nitrosodi-n-propylamine	-	-	-	-	-	-	-	-
55-18-5	N-Nitrosodiethylamine	-	-	-	-	-	-	-	-
62-75-9	N-Nitrosodimethylamine	-	-	-	-	-	-	-	-
86-30-6	N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-
59-89-2	N-Nitrosomorpholine	-	-	-	-	-	-	-	-
100-75-4	N-Nitrosopiperidine	-	-	-	-	-	-	-	-

111-84-2	N-Nonane	-	-	-	-	-	-	-	-
64724-95-6	Naphtha, High Flash Aroma	-	-	-	-	-	-	-	-
91-20-3	Naphthalene	-	-	-	-	-	-	-	-
193-09-9	Naphtho[2,3-e]pyrene	-	-	-	-	-	-	-	-
7440-02-0	Nickel	-	-	-	-	-	-	-	-
NICKEL-COM	Nickel Compounds	-	-	-	-	-	-	-	-
1313-99-1	Nickel oxide	-	-	-	-	-	-	-	-
0-02-5	Nickel refinery dust from the	-	-	-	-	-	-	-	-
12035-72-2	Nickel sulfide (NI3S2)	-	-	-	-	-	-	-	-
7697-37-2	Nitric acid	-	-	-	-	-	-	-	-
139-13-9	Nitrilotriacetic acid	-	-	-	-	-	-	-	-
18662-53-8	Nitrilotriacetic acid, trisodiu	-	-	-	-	-	-	-	-
602-87-9	Nitroacenaphthene, 5-	-	-	-	-	-	-	-	-
88-74-4	Nitroaniline, 2-	-	-	-	-	-	-	-	-
100-01-6	Nitroaniline, 4-	-	-	-	-	-	-	-	-
98-95-3	Nitrobenzene	-	-	-	-	-	-	-	-
7496-02-8	Nitrochrysene, 6-	-	-	-	-	-	-	-	-
607-57-8	Nitrofluorene, 2-	-	-	-	-	-	-	-	-
10102-44-0	Nitrogen dioxide (NO2)	-	-	-	-	-	-	-	-
75-52-5	Nitromethane	-	-	-	-	-	-	-	-
79-46-9	Nitropropane, 2-	-	-	-	-	-	-	-	-
5522-43-0	Nitropyrene, 1-	-	-	-	-	-	-	-	-
57835-92-4	Nitropyrene, 4-	-	-	-	-	-	-	-	-
156-10-5	Nitrosodiphenylamine, p-	-	-	-	-	-	-	-	-
3268-87-9	Octachlorodibenzo-p-dioxin,	-	-	-	-	-	-	-	-
39001-02-0	Octachlorodibenzofuran, 1,2	-	-	-	-	-	-	-	-
10028-15-6	Ozone	-	-	-	-	-	-	-	-
74472-37-0	PCB 114 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
31508-00-6	PCB 118 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
65510-44-3	PCB 123 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
57465-28-8	PCB 126 (3,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
38380-0804	PCB 156 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Hep	-	-	-	-	-	-	-	-
32598-13-3	PCB 77 (3,3,4,4-Tetrachloro	-	-	-	-	-	-	-	-
70362-50-4	PCB 81 (3,4,4,5 Tetrachloro	-	-	-	-	-	-	-	-
32598-14-4	PCB105 (2,3,3,4,4 Pentachl	-	-	-	-	-	-	-	-
40321-76-4	Pentachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-1	Pentachlorodibenzodioxins,	-	-	-	-	-	-	-	-
57117-41-6	Pentachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
57117-31-4	Pentachlorodibenzofuran, 2	-	-	-	-	-	-	-	-
00-09-0	Pentachlorodibenzofurans,	-	-	-	-	-	-	-	-
87-86-5	Pentachlorophenol	-	-	-	-	-	-	-	-
109-66-0	Pentane, n-	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
85-01-8	Phenanthrene	-	-	-	-	-	-	-	-
108-95-2	Phenol	-	-	-	-	-	-	-	-
75-44-5	Phosgene	-	-	-	-	-	-	-	-
7803-51-2	Phosphine	-	-	-	-	-	-	-	-
7664-38-2	Phosphoric acid	-	-	-	-	-	-	-	-
85-44-9	Phthalic anhydride	-	-	-	-	-	-	-	-
59536-65-1	Polybrominated Biphenyls	-	-	-	-	-	-	-	-
1336-36-3	Polychlorinated biphenyls (A	-	-	-	-	-	-	-	-
00-08-0	Polychlorinated Dibenzo-P-	-	-	-	-	-	-	-	-
00-05-0	Polychlorinated Dibenzodio	-	-	-	-	-	-	-	-
00-05-1	Polychlorinated Dibenzofura	-	-	-	-	-	-	-	-
130498-29-2	Polycyclic Aromatic Hydroca	-	-	-	-	-	-	-	-
00-01-7	Polycyclic Organic Matter (P	-	-	-	-	-	-	-	-
9016-87-9	Polymeric diphenylmethane	-	-	-	-	-	-	-	-
7758-01-2	Potassium bromate	-	-	-	-	-	-	-	-
1120-71-4	Propane sultone, 1,3-	-	-	-	-	-	-	-	-
57-57-8	Propiolactone, beta-	-	-	-	-	-	-	-	-
123-38-6	Propionaldehyde	-	-	-	-	-	-	-	-
115-07-1	Propylene	-	-	-	-	-	-	-	-
78-87-5	Propylene dichloride (1,2-Di	-	-	-	-	-	-	-	-
107-98-2	Propylene Glycol Monometh	-	-	-	-	-	-	-	-
75-56-9	Propylene oxide	-	-	-	-	-	-	-	-
930-55-2	Pyrrolidine, 1-Nitroso-	-	-	-	-	-	-	-	-
7782-49-2	Selenium	-	-	-	-	-	-	-	-
0-01-9	Selenium Compounds	-	-	-	-	-	-	-	-
7631-86-9	Silica (crystalline, respirable	-	-	-	-	-	-	-	-
1310-73-2	Sodium hydroxide	-	-	-	-	-	-	-	-
10588-01-9	Sodium Dichromate	-	-	-	-	-	-	-	-
7789-06-2	Strontium chromate	-	-	-	-	-	-	-	-
100-42-5	Styrene	-	-	-	-	-	-	-	-
96-09-3	Styrene oxide	-	-	-	-	-	-	-	-
14808-79-8	Sulfates	-	-	-	-	-	-	-	-
126-33-0	Sulfolane	-	-	-	-	-	-	-	-
7446-09-5	Sulfur dioxide	-	-	-	-	-	-	-	-
7664-93-9	Sulfuric acid (aerosol forms	-	-	-	-	-	-	-	-
8014-95-7	Sulfuric Acid mixture w. sulf	-	-	-	-	-	-	-	-
00-09-1	TCDD Eqivalents, 2,3,7,8-	-	-	-	-	-	-	-	-
540-88-5	Tert-Butyl Acetate	-	-	-	-	-	-	-	-
1746-01-6	Tetrachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-8	Tetrachlorodibenzodioxins,	-	-	-	-	-	-	-	-
51207-31-9	Tetrachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-

00-08-6	Tetrachlorodibenzofurans, A	-	-	-	-	-	-	-	-
630-20-6	Tetrachloroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
79-34-5	Tetrachloroethane, 1,1,2,2-	-	-	-	-	-	-	-	-
127-18-4	Tetrachloroethylene (Perchl	-	-	-	-	-	-	-	-
811-97-2	Tetrafluoroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
109-99-9	Tetrahydrofuran	-	-	-	-	-	-	-	-
62-55-5	Thioacetamide	-	-	-	-	-	-	-	-
62-56-6	Thiourea	-	-	-	-	-	-	-	-
108-88-3	Toluene	-	-	-	-	-	-	-	-
584-84-9	Toluene-2,4-diisocyanate	-	-	-	-	-	-	-	-
91-08-7	Toluene-2,6-diisocyanate	-	-	-	-	-	-	-	-
95-80-7	Toluene diamine, 2,4-	-	-	-	-	-	-	-	-
26471-62-5	Toluenediisocyanate (mixed	-	-	-	-	-	-	-	-
95-53-4	Toluidine, o- (Methylaniline,	-	-	-	-	-	-	-	-
8001-35-2	Toxaphene (chlorinated ca	-	-	-	-	-	-	-	-
10061-02-6	trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-
120-82-1	Trichlorobenzene, 1,2,4-	-	-	-	-	-	-	-	-
79-00-5	Trichloroethane, 1,1,2-	-	-	-	-	-	-	-	-
79-01-6	Trichloroethylene (TCE)	-	-	-	-	-	-	-	-
75-69-4	Trichlorofluoromethane (CF	-	-	-	-	-	-	-	-
88-06-2	Trichlorophenol, 2,4,6-	-	-	-	-	-	-	-	-
96-18-4	Trichloropropane, 1,2,3-	-	-	-	-	-	-	-	-
96-19-5	Trichloropropene, 1,2,3-	-	-	-	-	-	-	-	-
76-13-1	Trichlorotrifluoroethane, 1,1	-	-	-	-	-	-	-	-
121-44-8	Triethylamine	-	-	-	-	-	-	-	-
420-46-2	Trifluoroethane, 1,1,1-	-	-	-	-	-	-	-	-
526-73-8	Trimethylbenzene, 1,2,3-	-	-	-	-	-	-	-	-
95-63-6	Trimethylbenzene, 1,2,4-	-	-	-	-	-	-	-	-
108-67-8	Trimethylbenzene, 1,3,5-	-	-	-	-	-	-	-	-
URANIUM-SO	Uranium (Soluble Salts)	-	-	-	-	-	-	-	-
7440-61-1	Uranium, Insoluble Compou	-	-	-	-	-	-	-	-
7440-62-2	Vanadium and Compounds	-	-	-	-	-	-	-	-
1314-62-1	Vanadium Pentoxide, (V2O	-	-	-	-	-	-	-	-
108-05-4	Vinyl acetate	-	-	-	-	-	-	-	-
593-60-2	Vinyl bromide	-	-	-	-	-	-	-	-
75-01-4	Vinyl chloride	-	-	-	-	-	-	-	-
1330-20-7	Xylenes	-	-	-	-	-	-	-	-
108-38-3	Xylenes, m-	-	-	-	-	-	-	-	-
95-47-6	Xylenes, o-	-	-	-	-	-	-	-	-
106-42-3	Xylenes, p-	-	-	-	-	-	-	-	-
13530-65-9	Zinc chromate	-	-	-	-	-	-	-	-

RASS version: 2020-12

No inputs needed on this page

Air Concentrations in ug/m3

		Stack #24				Stack #25			
CAS# or MPCA#	**Chemical Name**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**
202-94-8	11H-Benz[b,c]aceanthrylene	-	-	-	-	-	-	-	-
202-98-2	4H-Cyclopenta[d,e,f]chrysen	-	-	-	-	-	-	-	-
75-07-0	Acetaldehyde	-	-	-	-	-	-	-	-
60-35-5	Acetamide	-	-	-	-	-	-	-	-
67-64-1	Acetone	-	-	-	-	-	-	-	-
75-86-5	Acetone Cyanohydrin	-	-	-	-	-	-	-	-
75-05-8	Acetonitrile	-	-	-	-	-	-	-	-
53-96-3	Acetylaminofluorene, 2-	-	-	-	-	-	-	-	-
107-02-8	Acrolein	-	-	-	-	-	-	-	-
79-06-1	Acrylamide	-	-	-	-	-	-	-	-
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-	-	-	-	-	-	-	-	-
79-10-7	Acrylic acid	-	-	-	-	-	-	-	-
107-13-1	Acrylonitrile	-	-	-	-	-	-	-	-
111-69-3	Adiponitrile	-	-	-	-	-	-	-	-
ALDEHYDES	Aldehydes	-	-	-	-	-	-	-	-
309-00-2	Aldrin	-	-	-	-	-	-	-	-
ALIPHATIC-M	Aliphatic Hydrocarbon Strea	-	-	-	-	-	-	-	-
107-05-1	Allyl chloride	-	-	-	-	-	-	-	-
7429-90-5	Aluminum	-	-	-	-	-	-	-	-
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3	-	-	-	-	-	-	-	-
6109-97-3	Amino-9-ethylcarbazolehydr	-	-	-	-	-	-	-	-
117-79-3	Aminoanthraquinone, 2-	-	-	-	-	-	-	-	-
7664-41-7	Ammonia	-	-	-	-	-	-	-	-
62-53-3	Aniline	-	-	-	-	-	-	-	-
191-26-4	Anthanthrene	-	-	-	-	-	-	-	-
7440-36-0	Antimony	-	-	-	-	-	-	-	-
ANTIMONY-C	Antimony Compounds	-	-	-	-	-	-	-	-
1309-64-4	Antimony trioxide	-	-	-	-	-	-	-	-
140-57-8	Aramite	-	-	-	-	-	-	-	-
7440-38-2	Arsenic	-	-	-	-	-	-	-	-
ARSENIC-CO	Arsenic Compounds	-	-	-	-	-	-	-	-
1327-53-3	Arsenic Trioxide	-	-	-	-	-	-	-	-
7784-42-1	Arsine	-	-	-	-	-	-	-	-
1332-21-4	Asbestos (units in fibers)	-	-	-	-	-	-	-	-
1332-21-4-LA	Asbestos, Libby Amphibole	-	-	-	-	-	-	-	-
123-77-3	Azodicarbonamide	-	-	-	-	-	-	-	-
10294-40-3	Barium Chromate	-	-	-	-	-	-	-	-
199-54-2	Benz[e]aceanthrylene	-	-	-	-	-	-	-	-
202-33-5	Benz[j]aceanthrylene	-	-	-	-	-	-	-	-
211-91-6	Benz[l]aceanthrylene	-	-	-	-	-	-	-	-
71-43-2	Benzene	-	-	-	-	-	-	-	-
92-87-5	Benzidine	-	-	-	-	-	-	-	-
205-82-3	Benzo(j)fluoranthene	-	-	-	-	-	-	-	-
207-08-9	Benzo(k)fluoranthene	-	-	-	-	-	-	-	-
56-55-3	Benzo[a]anthracene	-	-	-	-	-	-	-	-
50-32-8	Benzo[a]pyrene	-	-	-	-	-	-	-	-
205-99-2	Benzo[b]fluoranthene	-	-	-	-	-	-	-	-
205-12-9	Benzo[c]fluorene	-	-	-	-	-	-	-	-
191-24-2	Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-
65-85-0	Benzoic Acid	-	-	-	-	-	-	-	-
100-44-7	Benzyl chloride	-	-	-	-	-	-	-	-
7440-41-7	Beryllium	-	-	-	-	-	-	-	-
BERYLLIUM-	Beryllium Compounds	-	-	-	-	-	-	-	-
13510-49-1	Beryllium sulfate	-	-	-	-	-	-	-	-
111-44-4	Bis(2-chloroethyl)ether	-	-	-	-	-	-	-	-
117-81-7	Bis(2-ethylhexyl)phthalate (	-	-	-	-	-	-	-	-
542-88-1	Bis(chloromethyl)ether	-	-	-	-	-	-	-	-
7440-42-8	Boron And Borates Only	-	-	-	-	-	-	-	-
10294-34-5	Boron Trichloride	-	-	-	-	-	-	-	-
7637-07-2	Boron Trifluoride	-	-	-	-	-	-	-	-
108-86-1	Bromobenzene	-	-	-	-	-	-	-	-
74-97-5	Bromochloromethane	-	-	-	-	-	-	-	-
75-27-4	Bromodichloromethane	-	-	-	-	-	-	-	-
75-25-2	Bromoform	-	-	-	-	-	-	-	-
74-83-9	Bromomethane	-	-	-	-	-	-	-	-
106-94-5	Bromopropane, 1-	-	-	-	-	-	-	-	-
106-99-0	Butadiene, 1,3-	-	-	-	-	-	-	-	-
78-92-2	Butyl alcohol, sec-	-	-	-	-	-	-	-	-
111-76-2	Butyl Cellosolve (ethylene g	-	-	-	-	-	-	-	-
25013-16-5	Butylated hydroxyanisole	-	-	-	-	-	-	-	-
3068-88-0	Butyrolactone, beta-	-	-	-	-	-	-	-	-
7440-43-9	Cadmium	-	-	-	-	-	-	-	-
CADMIUM-CO	Cadmium Compounds	-	-	-	-	-	-	-	-
13765-19-0	Calcium Chromate	-	-	-	-	-	-	-	-
105-60-2	Caprolactum	-	-	-	-	-	-	-	-
75-15-0	Carbon disulfide	-	-	-	-	-	-	-	-
630-08-0	Carbon Monoxide	-	-	-	-	-	-	-	-
56-23-5	Carbon tetrachloride	-	-	-	-	-	-	-	-
463-58-1	Carbonyl sulfide	-	-	-	-	-	-	-	-
111-15-9	Cellosolve Acetate (ethylen	-	-	-	-	-	-	-	-
1306-38-3	Cerium Oxide and Cerium C	-	-	-	-	-	-	-	-
12789-03-6	Chlordane or (57-74-9)	-	-	-	-	-	-	-	-
115-28-6	Chlorendic acid	-	-	-	-	-	-	-	-
108171-26-2	Chlorinated Paraffins (C12,	-	-	-	-	-	-	-	-
7782-50-5	Chlorine	-	-	-	-	-	-	-	-

10049-04-4	Chlorine Oxide (CLO2)	-	-	-	-	-	-	-	-
75-68-3	Chloro-1,1-difluoroethane, 1	-	-	-	-	-	-	-	-
563-47-3	Chloro-2-methylpropene, 3-	-	-	-	-	-	-	-	-
95-83-0	Chloro-o-phenylenediamine	-	-	-	-	-	-	-	-
95-69-2	Chloro-o-toluidine, p-	-	-	-	-	-	-	-	-
532-27-4	Chloroacetophenone, 2-	-	-	-	-	-	-	-	-
108-90-7	Chlorobenzene	-	-	-	-	-	-	-	-
98-56-6	Chlorobenzotrifluoride, 4-	-	-	-	-	-	-	-	-
75-45-6	Chlorodifluoromethane (HC	-	-	-	-	-	-	-	-
67-66-3	Chloroform	-	-	-	-	-	-	-	-
107-30-2	Chloromethyl Methyl Ether	-	-	-	-	-	-	-	-
88-73-3	Chloronitrobenzene, o-	-	-	-	-	-	-	-	-
100-00-5	Chloronitrobenzene, p-	-	-	-	-	-	-	-	-
76-06-2	Chloropicrin	-	-	-	-	-	-	-	-
126-99-8	Chloroprene	-	-	-	-	-	-	-	-
1333-82-0	Chromic acid mists and diss	-	-	-	-	-	-	-	-
7440-47-3	Chromium	-	-	-	-	-	-	-	-
18540-29-9	Chromium (Hexavalent)	-	-	-	-	-	-	-	-
18540-29-9-p	Chromium (Hexavalent) - P	-	-	-	-	-	-	-	-
CHROM-COM	Chromium Compounds	-	-	-	-	-	-	-	-
16065-83-1	Chromium(III) Compounds	-	-	-	-	-	-	-	-
218-01-9	Chrysene (Benzo(a)phenan	-	-	-	-	-	-	-	-
87-29-6	Cinnamyl anthranilate	-	-	-	-	-	-	-	-
10061-01-5	cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-
8007-45-2	Coal Tar	-	-	-	-	-	-	-	-
7440-48-4	Cobalt	-	-	-	-	-	-	-	-
0-00-7	Coke Oven Emissions	-	-	-	-	-	-	-	-
7440-50-8	Copper	-	-	-	-	-	-	-	-
COPPER-CO	Copper Compounds	-	-	-	-	-	-	-	-
120-71-8	Cresidine, p-	-	-	-	-	-	-	-	-
108-39-4	Cresol, m-	-	-	-	-	-	-	-	-
95-48-7	Cresol, o-	-	-	-	-	-	-	-	-
106-44-5	Cresol, p-	-	-	-	-	-	-	-	-
1319-77-3	Cresols/Cresylic acid (isome	-	-	-	-	-	-	-	-
98-82-8	Cumene	-	-	-	-	-	-	-	-
135-20-6	Cupferron	-	-	-	-	-	-	-	-
57-12-5	Cyanide (Cyanide ion, Inorg	-	-	-	-	-	-	-	-
CYANIDE-CO	Cyanide Compounds	-	-	-	-	-	-	-	-
110-82-7	Cyclohexane	-	-	-	-	-	-	-	-
108-94-1	Cyclohexanone	-	-	-	-	-	-	-	-
27208-37-3	Cyclopenta[c,d]pyrene	-	-	-	-	-	-	-	-
50-29-3	DDT	-	-	-	-	-	-	-	-
615-05-4	Diaminoanisole, 2,4-	-	-	-	-	-	-	-	-
101-80-4	Diaminodiphenyl ether, 4,4-	-	-	-	-	-	-	-	-
103-33-3	Diazene, Diphenyl	-	-	-	-	-	-	-	-
226-36-8	Dibenz(a,h)acridine	-	-	-	-	-	-	-	-
224-42-0	Dibenz(a,j)acridine	-	-	-	-	-	-	-	-
53-70-3	Dibenz[a,h]anthracene	-	-	-	-	-	-	-	-
192-65-4	Dibenzo(a,e)pyrene	-	-	-	-	-	-	-	-
189-64-0	Dibenzo(a,h)pyrene	-	-	-	-	-	-	-	-
191-30-0	Dibenzo(a,l)pyrene	-	-	-	-	-	-	-	-
194-59-2	Dibenzo(c,g)carbazole, 7H-	-	-	-	-	-	-	-	-
5385-75-1	Dibenzo[a,e]fluoranthene	-	-	-	-	-	-	-	-
189-55-9	Dibenzo[a,i]pyrene	-	-	-	-	-	-	-	-
96-12-8	Dibromo-3-chloropropane, 1	-	-	-	-	-	-	-	-
764-41-0	Dichloro-2-butene, 1,4-	-	-	-	-	-	-	-	-
1476-11-5	Dichloro-2-butene, cis-1,4-	-	-	-	-	-	-	-	-
106-46-7	Dichlorobenzene(p), 1,4-	-	-	-	-	-	-	-	-
25321-22-6	Dichlorobenzenes	-	-	-	-	-	-	-	-
91-94-1	Dichlorobenzidene, 3,3-	-	-	-	-	-	-	-	-
75-71-8	Dichlorodifluoromethane (C	-	-	-	-	-	-	-	-
75-35-4	Dichloroethylene (1,1-) (Vin	-	-	-	-	-	-	-	-
156-60-5	Dichloroethylene, trans-1,2-	-	-	-	-	-	-	-	-
542-75-6	Dichloropropene, 1,3-	-	-	-	-	-	-	-	-
78-88-6	Dichloropropene, 2,3-	-	-	-	-	-	-	-	-
62-73-7	Dichlorvos	-	-	-	-	-	-	-	-
77-73-6	Dicyclopentadiene	-	-	-	-	-	-	-	-
60-57-1	Dieldrin	-	-	-	-	-	-	-	-
0-02-4	Diesel exhaust particulate	-	-	-	-	-	-	-	-
111-42-2	Diethanolamine	-	-	-	-	-	-	-	-
112-34-5	Diethylene Glycol Monobuty	-	-	-	-	-	-	-	-
111-90-0	Diethylene Glycol Monoethy	-	-	-	-	-	-	-	-
75-37-6	Difluoroethane, 1,1-	-	-	-	-	-	-	-	-
108-20-3	Diisopropyl Ether	-	-	-	-	-	-	-	-
60-11-7	Dimethyl aminoazobenzene	-	-	-	-	-	-	-	-
68-12-2	Dimethyl formamide	-	-	-	-	-	-	-	-
108-01-0	Dimethylamino ethanol, 2-	-	-	-	-	-	-	-	-
57-97-6	Dimethylbenz[a]anthracene,	-	-	-	-	-	-	-	-
57-14-7	Dimethylhydrazine, 1,1-	-	-	-	-	-	-	-	-
42397-64-8	Dinitropyrene, 1,6- (BaP)	-	-	-	-	-	-	-	-
42397-65-9	Dinitropyrene, 1,8- (BaP)	-	-	-	-	-	-	-	-
121-14-2	Dinitrotoluene, 2,4-	-	-	-	-	-	-	-	-
123-91-1	Dioxane, 1,4- (1,4-Diethylen	-	-	-	-	-	-	-	-
122-66-7	Diphenylhydrazine, 1,2-	-	-	-	-	-	-	-	-
106-89-8	Epichlorohydrin (l-Chloro-2,	-	-	-	-	-	-	-	-
106-88-7	Epoxybutane, 1,2-	-	-	-	-	-	-	-	-
110-80-5	Ethoxyethanol, 2- (ethylene	-	-	-	-	-	-	-	-
141-78-6	Ethyl acetate	-	-	-	-	-	-	-	-
140-88-5	Ethyl Acrylate	-	-	-	-	-	-	-	-
100-41-4	Ethyl benzene	-	-	-	-	-	-	-	-
51-79-6	Ethyl carbamate (Urethane)	-	-	-	-	-	-	-	-

75-00-3	Ethyl chloride (Chloroethane	-	-	-	-	-	-	-	-
97-63-2	Ethyl Methacrylate	-	-	-	-	-	-	-	-
106-93-4	Ethylene dibromide (Dibrom	-	-	-	-	-	-	-	-
107-06-2	Ethylene dichloride (1,2-Dic	-	-	-	-	-	-	-	-
107-21-1	Ethylene glycol	-	-	-	-	-	-	-	-
75-21-8	Ethylene oxide	-	-	-	-	-	-	-	-
96-45-7	Ethylene thiourea	-	-	-	-	-	-	-	-
75-34-3	Ethylidene dichloride (1,1-D	-	-	-	-	-	-	-	-
206-44-0	Fluoranthene	-	-	-	-	-	-	-	-
FLUORIDES	Fluorides (except hydrogen	-	-	-	-	-	-	-	-
50-00-0	Formaldehyde	-	-	-	-	-	-	-	-
64-18-6	Formic Acid	-	-	-	-	-	-	-	-
111-30-8	Glutaraldehyde	-	-	-	-	-	-	-	-
0-01-2	Glycol ethers	-	-	-	-	-	-	-	-
76-44-8	Heptachlor	-	-	-	-	-	-	-	-
1024-57-3	Heptachlor epoxide	-	-	-	-	-	-	-	-
35822-46-9	Heptachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-5	Heptachlorodibenzodioxin,	-	-	-	-	-	-	-	-
67562-39-4	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
55673-89-7	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
00-08-4	Heptachlorodibenzofuran, A	-	-	-	-	-	-	-	-
142-82-5	Heptane, N	-	-	-	-	-	-	-	-
118-74-1	Hexachlorobenzene	-	-	-	-	-	-	-	-
87-68-3	Hexachlorobutadiene	-	-	-	-	-	-	-	-
608-73-1	Hexachlorocyclohexane (tec	-	-	-	-	-	-	-	-
319-84-6	Hexachlorocyclohexane, alp	-	-	-	-	-	-	-	-
319-85-7	Hexachlorocyclohexane, be	-	-	-	-	-	-	-	-
77-47-4	Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-
39227-28-6	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
57653-85-7	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
19408-74-3	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-3	Hexachlorodibenzodioxins,	-	-	-	-	-	-	-	-
70648-26-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
57117-44-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
72918-21-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
60851-34-5	Hexachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-
00-08-2	Hexachlorodibenzofurans, A	-	-	-	-	-	-	-	-
67-72-1	Hexachloroethane	-	-	-	-	-	-	-	-
822-06-0	Hexamethylene-1,6-diisocya	-	-	-	-	-	-	-	-
110-54-3	Hexane	-	-	-	-	-	-	-	-
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl	-	-	-	-	-	-	-	-
591-78-6	Hexanone-2	-	-	-	-	-	-	-	-
302-01-2	Hydrazine	-	-	-	-	-	-	-	-
10034-93-2	Hydrazine sulfate	-	-	-	-	-	-	-	-
7647-01-0	Hydrochloric acid (hydrogen	-	-	-	-	-	-	-	-
74-90-8	Hydrogen cyanide	-	-	-	-	-	-	-	-
7664-39-3	Hydrogen fluoride (Hydroflu	-	-	-	-	-	-	-	-
7783-07-5	Hydrogen selenide	-	-	-	-	-	-	-	-
7783-06-4	Hydrogen sulfide	-	-	-	-	-	-	-	-
193-39-5	Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-
5888-33-5	Isobornyl acrylate	-	-	-	-	-	-	-	-
78-59-1	Isophorone	-	-	-	-	-	-	-	-
67-63-0	Isopropyl alcohol	-	-	-	-	-	-	-	-
7439-92-1	Lead	-	-	-	-	-	-	-	-
7758-97-6	Lead Chromate	-	-	-	-	-	-	-	-
LEAD-COMP	Lead Compounds	-	-	-	-	-	-	-	-
58-89-9	Lindane (all isomers)	-	-	-	-	-	-	-	-
108-31-6	Maleic anhydride	-	-	-	-	-	-	-	-
7439-96-5	Manganese	-	-	-	-	-	-	-	-
MANGANESE	Manganese Compounds	-	-	-	-	-	-	-	-
7439-97-6	Mercury (elemental)	-	-	-	-	-	-	-	-
MERCURY-C	Mercury Compounds	-	-	-	-	-	-	-	-
126-98-7	Methacrylonitrile	-	-	-	-	-	-	-	-
67-56-1	Methanol	-	-	-	-	-	-	-	-
109-86-4	Methoxyethanol, 2- (ethylen	-	-	-	-	-	-	-	-
96-33-3	Methyl acrylate	-	-	-	-	-	-	-	-
110-49-6	Methyl Cellosolve Acetate	-	-	-	-	-	-	-	-
74-87-3	Methyl chloride (Chlorometh	-	-	-	-	-	-	-	-
71-55-6	Methyl chloroform (1,1,1-Tri	-	-	-	-	-	-	-	-
78-93-3	Methyl ethyl ketone (2-Buta	-	-	-	-	-	-	-	-
60-34-4	Methyl Hydrazine	-	-	-	-	-	-	-	-
108-10-1	Methyl isobutyl ketone (Hex	-	-	-	-	-	-	-	-
624-83-9	Methyl isocyanate	-	-	-	-	-	-	-	-
80-62-6	Methyl methacrylate	-	-	-	-	-	-	-	-
1634-04-4	Methyl tert butyl ether	-	-	-	-	-	-	-	-
56-49-5	Methylcholanthrene, 3-	-	-	-	-	-	-	-	-
3697-24-3	Methylchrysene, 5-	-	-	-	-	-	-	-	-
101-14-4	Methylene bis(2-chloroanilin	-	-	-	-	-	-	-	-
74-95-3	Methylene Bromide	-	-	-	-	-	-	-	-
75-09-2	Methylene chloride (Dichlor	-	-	-	-	-	-	-	-
101-68-8	Methylene diphenyl diisocya	-	-	-	-	-	-	-	-
101-77-9	Methylenedianiline, 4,4-	-	-	-	-	-	-	-	-
90-94-8	Michler's ketone	-	-	-	-	-	-	-	-
10595-95-6	N- Nitrosomethylethylamine	-	-	-	-	-	-	-	-
924-16-3	N-Nitrosodi-n-butylamine	-	-	-	-	-	-	-	-
621-64-7	N-Nitrosodi-n-propylamine	-	-	-	-	-	-	-	-
55-18-5	N-Nitrosodiethylamine	-	-	-	-	-	-	-	-
62-75-9	N-Nitrosodimethylamine	-	-	-	-	-	-	-	-
86-30-6	N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-
59-89-2	N-Nitrosomorpholine	-	-	-	-	-	-	-	-
100-75-4	N-Nitrosopiperidine	-	-	-	-	-	-	-	-

111-84-2	N-Nonane	-	-	-	-	-	-	-	-
64724-95-6	Naphtha, High Flash Aroma	-	-	-	-	-	-	-	-
91-20-3	Naphthalene	-	-	-	-	-	-	-	-
193-09-9	Naphtho[2,3-e]pyrene	-	-	-	-	-	-	-	-
7440-02-0	Nickel	-	-	-	-	-	-	-	-
NICKEL-COM	Nickel Compounds	-	-	-	-	-	-	-	-
1313-99-1	Nickel oxide	-	-	-	-	-	-	-	-
0-02-5	Nickel refinery dust from the	-	-	-	-	-	-	-	-
12035-72-2	Nickel sulfide (NI3S2)	-	-	-	-	-	-	-	-
7697-37-2	Nitric acid	-	-	-	-	-	-	-	-
139-13-9	Nitrilotriacetic acid	-	-	-	-	-	-	-	-
18662-53-8	Nitrilotriacetic acid, trisodiu	-	-	-	-	-	-	-	-
602-87-9	Nitroacenaphthene, 5-	-	-	-	-	-	-	-	-
88-74-4	Nitroaniline, 2-	-	-	-	-	-	-	-	-
100-01-6	Nitroaniline, 4-	-	-	-	-	-	-	-	-
98-95-3	Nitrobenzene	-	-	-	-	-	-	-	-
7496-02-8	Nitrochrysene, 6-	-	-	-	-	-	-	-	-
607-57-8	Nitrofluorene, 2-	-	-	-	-	-	-	-	-
10102-44-0	Nitrogen dioxide (NO2)	-	-	-	-	-	-	-	-
75-52-5	Nitromethane	-	-	-	-	-	-	-	-
79-46-9	Nitropropane, 2-	-	-	-	-	-	-	-	-
5522-43-0	Nitropyrene, 1-	-	-	-	-	-	-	-	-
57835-92-4	Nitropyrene, 4-	-	-	-	-	-	-	-	-
156-10-5	Nitrosodiphenylamine, p-	-	-	-	-	-	-	-	-
3268-87-9	Octachlorodibenzo-p-dioxin,	-	-	-	-	-	-	-	-
39001-02-0	Octachlorodibenzofuran, 1,2	-	-	-	-	-	-	-	-
10028-15-6	Ozone	-	-	-	-	-	-	-	-
74472-37-0	PCB 114 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
31508-00-6	PCB 118 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
65510-44-3	PCB 123 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
57465-28-8	PCB 126 (3,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
38380-0804	PCB 156 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Hep	-	-	-	-	-	-	-	-
32598-13-3	PCB 77 (3,3,4,4-Tetrachloro	-	-	-	-	-	-	-	-
70362-50-4	PCB 81 (3,4,4,5 Tetrachloro	-	-	-	-	-	-	-	-
32598-14-4	PCB105 (2,3,3,4,4 Pentachl	-	-	-	-	-	-	-	-
40321-76-4	Pentachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-1	Pentachlorodibenzodioxins,	-	-	-	-	-	-	-	-
57117-41-6	Pentachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
57117-31-4	Pentachlorodibenzofuran, 2	-	-	-	-	-	-	-	-
00-09-0	Pentachlorodibenzofurans,	-	-	-	-	-	-	-	-
87-86-5	Pentachlorophenol	-	-	-	-	-	-	-	-
109-66-0	Pentane, n-	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
85-01-8	Phenanthrene	-	-	-	-	-	-	-	-
108-95-2	Phenol	-	-	-	-	-	-	-	-
75-44-5	Phosgene	-	-	-	-	-	-	-	-
7803-51-2	Phosphine	-	-	-	-	-	-	-	-
7664-38-2	Phosphoric acid	-	-	-	-	-	-	-	-
85-44-9	Phthalic anhydride	-	-	-	-	-	-	-	-
59536-65-1	Polybrominated Biphenyls	-	-	-	-	-	-	-	-
1336-36-3	Polychlorinated biphenyls (A	-	-	-	-	-	-	-	-
00-08-0	Polychlorinated Dibenzo-P-	-	-	-	-	-	-	-	-
00-05-0	Polychlorinated Dibenzodio	-	-	-	-	-	-	-	-
00-05-1	Polychlorinated Dibenzofura	-	-	-	-	-	-	-	-
130498-29-2	Polycyclic Aromatic Hydroca	-	-	-	-	-	-	-	-
00-01-7	Polycyclic Organic Matter (P	-	-	-	-	-	-	-	-
9016-87-9	Polymeric diphenylmethane	-	-	-	-	-	-	-	-
7758-01-2	Potassium bromate	-	-	-	-	-	-	-	-
1120-71-4	Propane sultone, 1,3-	-	-	-	-	-	-	-	-
57-57-8	Propiolactone, beta-	-	-	-	-	-	-	-	-
123-38-6	Propionaldehyde	-	-	-	-	-	-	-	-
115-07-1	Propylene	-	-	-	-	-	-	-	-
78-87-5	Propylene dichloride (1,2-Di	-	-	-	-	-	-	-	-
107-98-2	Propylene Glycol Monometh	-	-	-	-	-	-	-	-
75-56-9	Propylene oxide	-	-	-	-	-	-	-	-
930-55-2	Pyrrolidine, 1-Nitroso-	-	-	-	-	-	-	-	-
7782-49-2	Selenium	-	-	-	-	-	-	-	-
0-01-9	Selenium Compounds	-	-	-	-	-	-	-	-
7631-86-9	Silica (crystalline, respirable	-	-	-	-	-	-	-	-
1310-73-2	Sodium hydroxide	-	-	-	-	-	-	-	-
10588-01-9	Sodium Dichromate	-	-	-	-	-	-	-	-
7789-06-2	Strontium chromate	-	-	-	-	-	-	-	-
100-42-5	Styrene	-	-	-	-	-	-	-	-
96-09-3	Styrene oxide	-	-	-	-	-	-	-	-
14808-79-8	Sulfates	-	-	-	-	-	-	-	-
126-33-0	Sulfolane	-	-	-	-	-	-	-	-
7446-09-5	Sulfur dioxide	-	-	-	-	-	-	-	-
7664-93-9	Sulfuric acid (aerosol forms	-	-	-	-	-	-	-	-
8014-95-7	Sulfuric Acid mixture w. sulf	-	-	-	-	-	-	-	-
00-09-1	TCDD Eqivalents, 2,3,7,8-	-	-	-	-	-	-	-	-
540-88-5	Tert-Butyl Acetate	-	-	-	-	-	-	-	-
1746-01-6	Tetrachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-8	Tetrachlorodibenzodioxins,	-	-	-	-	-	-	-	-
51207-31-9	Tetrachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-

00-08-6	Tetrachlorodibenzofurans, A	-	-	-	-	-	-	-	-
630-20-6	Tetrachloroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
79-34-5	Tetrachloroethane, 1,1,2,2-	-	-	-	-	-	-	-	-
127-18-4	Tetrachloroethylene (Perchl	-	-	-	-	-	-	-	-
811-97-2	Tetrafluoroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
109-99-9	Tetrahydrofuran	-	-	-	-	-	-	-	-
62-55-5	Thioacetamide	-	-	-	-	-	-	-	-
62-56-6	Thiourea	-	-	-	-	-	-	-	-
108-88-3	Toluene	-	-	-	-	-	-	-	-
584-84-9	Toluene-2,4-diisocyanate	-	-	-	-	-	-	-	-
91-08-7	Toluene-2,6-diisocyanate	-	-	-	-	-	-	-	-
95-80-7	Toluene diamine, 2,4-	-	-	-	-	-	-	-	-
26471-62-5	Toluenediisocyanate (mixed	-	-	-	-	-	-	-	-
95-53-4	Toluidine, o- (Methylaniline,	-	-	-	-	-	-	-	-
8001-35-2	Toxaphene (chlorinated ca	-	-	-	-	-	-	-	-
10061-02-6	trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-
120-82-1	Trichlorobenzene, 1,2,4-	-	-	-	-	-	-	-	-
79-00-5	Trichloroethane, 1,1,2-	-	-	-	-	-	-	-	-
79-01-6	Trichloroethylene (TCE)	-	-	-	-	-	-	-	-
75-69-4	Trichlorofluoromethane (CF	-	-	-	-	-	-	-	-
88-06-2	Trichlorophenol, 2,4,6-	-	-	-	-	-	-	-	-
96-18-4	Trichloropropane, 1,2,3-	-	-	-	-	-	-	-	-
96-19-5	Trichloropropene, 1,2,3-	-	-	-	-	-	-	-	-
76-13-1	Trichlorotrifluoroethane, 1,1	-	-	-	-	-	-	-	-
121-44-8	Triethylamine	-	-	-	-	-	-	-	-
420-46-2	Trifluoroethane, 1,1,1-	-	-	-	-	-	-	-	-
526-73-8	Trimethylbenzene, 1,2,3-	-	-	-	-	-	-	-	-
95-63-6	Trimethylbenzene, 1,2,4-	-	-	-	-	-	-	-	-
108-67-8	Trimethylbenzene, 1,3,5-	-	-	-	-	-	-	-	-
URANIUM-SO	Uranium (Soluble Salts)	-	-	-	-	-	-	-	-
7440-61-1	Uranium, Insoluble Compou	-	-	-	-	-	-	-	-
7440-62-2	Vanadium and Compounds	-	-	-	-	-	-	-	-
1314-62-1	Vanadium Pentoxide, (V2O	-	-	-	-	-	-	-	-
108-05-4	Vinyl acetate	-	-	-	-	-	-	-	-
593-60-2	Vinyl bromide	-	-	-	-	-	-	-	-
75-01-4	Vinyl chloride	-	-	-	-	-	-	-	-
1330-20-7	Xylenes	-	-	-	-	-	-	-	-
108-38-3	Xylenes, m-	-	-	-	-	-	-	-	-
95-47-6	Xylenes, o-	-	-	-	-	-	-	-	-
106-42-3	Xylenes, p-	-	-	-	-	-	-	-	-
13530-65-9	Zinc chromate	-	-	-	-	-	-	-	-

RASS version: 2020-12

No inputs needed on this page

Air Concentrations in ug/m3

		Stack #26				Stack #27			
CAS# or MPCA#	**Chemical Name**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**
202-94-8	11H-Benz[b,c]aceanthrylene	-	-	-	-	-	-	-	-
202-98-2	4H-Cyclopenta[d,e,f]chrysen	-	-	-	-	-	-	-	-
75-07-0	Acetaldehyde	-	-	-	-	-	-	-	-
60-35-5	Acetamide	-	-	-	-	-	-	-	-
67-64-1	Acetone	-	-	-	-	0.01	0.00	0.00	0.00
75-86-5	Acetone Cyanohydrin	-	-	-	-	-	-	-	-
75-05-8	Acetonitrile	-	-	-	-	-	-	-	-
53-96-3	Acetylaminofluorene, 2-	-	-	-	-	-	-	-	-
107-02-8	Acrolein	-	-	-	-	-	-	-	-
79-06-1	Acrylamide	-	-	-	-	-	-	-	-
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-	-	-	-	-	-	-	-	-
79-10-7	Acrylic acid	-	-	-	-	-	-	-	-
107-13-1	Acrylonitrile	-	-	-	-	-	-	-	-
111-69-3	Adiponitrile	-	-	-	-	-	-	-	-
ALDEHYDES	Aldehydes	-	-	-	-	-	-	-	-
309-00-2	Aldrin	-	-	-	-	-	-	-	-
ALIPHATIC-M	Aliphatic Hydrocarbon Strea	-	-	-	-	-	-	-	-
107-05-1	Allyl chloride	-	-	-	-	-	-	-	-
7429-90-5	Aluminum	-	-	-	-	-	-	-	-
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3	-	-	-	-	-	-	-	-
6109-97-3	Amino-9-ethylcarbazolehydr	-	-	-	-	-	-	-	-
117-79-3	Aminoanthraquinone, 2-	-	-	-	-	-	-	-	-
7664-41-7	Ammonia	-	-	-	-	-	-	-	-
62-53-3	Aniline	-	-	-	-	-	-	-	-
191-26-4	Anthanthrene	-	-	-	-	-	-	-	-
7440-36-0	Antimony	-	-	-	-	-	-	-	-
ANTIMONY-C	Antimony Compounds	-	-	-	-	-	-	-	-
1309-64-4	Antimony trioxide	-	-	-	-	-	-	-	-
140-57-8	Aramite	-	-	-	-	-	-	-	-
7440-38-2	Arsenic	-	-	-	-	-	-	-	-
ARSENIC-CO	Arsenic Compounds	-	-	-	-	-	-	-	-
1327-53-3	Arsenic Trioxide	-	-	-	-	-	-	-	-
7784-42-1	Arsine	-	-	-	-	-	-	-	-
1332-21-4	Asbestos (units in fibers)	-	-	-	-	-	-	-	-
1332-21-4-LA	Asbestos, Libby Amphibole	-	-	-	-	-	-	-	-
123-77-3	Azodicarbonamide	-	-	-	-	-	-	-	-
10294-40-3	Barium Chromate	-	-	-	-	-	-	-	-
199-54-2	Benz[e]aceanthrylene	-	-	-	-	-	-	-	-
202-33-5	Benz[j]aceanthrylene	-	-	-	-	-	-	-	-
211-91-6	Benz[l]aceanthrylene	-	-	-	-	-	-	-	-
71-43-2	Benzene	-	-	-	-	0.00	0.00	0.00	0.00
92-87-5	Benzidine	-	-	-	-	-	-	-	-
205-82-3	Benzo(j)fluoranthene	-	-	-	-	-	-	-	-
207-08-9	Benzo(k)fluoranthene	-	-	-	-	-	-	-	-
56-55-3	Benzo[a]anthracene	-	-	-	-	-	-	-	-
50-32-8	Benzo[a]pyrene	-	-	-	-	-	-	-	-
205-99-2	Benzo[b]fluoranthene	-	-	-	-	-	-	-	-
205-12-9	Benzo[c]fluorene	-	-	-	-	-	-	-	-
191-24-2	Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-
65-85-0	Benzoic Acid	-	-	-	-	-	-	-	-
100-44-7	Benzyl chloride	-	-	-	-	0.00	0.00	0.00	0.00
7440-41-7	Beryllium	-	-	-	-	-	-	-	-
BERYLLIUM-	Beryllium Compounds	-	-	-	-	-	-	-	-
13510-49-1	Beryllium sulfate	-	-	-	-	-	-	-	-
111-44-4	Bis(2-chloroethyl)ether	-	-	-	-	-	-	-	-
117-81-7	Bis(2-ethylhexyl)phthalate (	-	-	-	-	-	-	-	-
542-88-1	Bis(chloromethyl)ether	-	-	-	-	-	-	-	-
7440-42-8	Boron And Borates Only	-	-	-	-	-	-	-	-
10294-34-5	Boron Trichloride	-	-	-	-	-	-	-	-
7637-07-2	Boron Trifluoride	-	-	-	-	-	-	-	-
108-86-1	Bromobenzene	-	-	-	-	-	-	-	-
74-97-5	Bromochloromethane	-	-	-	-	-	-	-	-
75-27-4	Bromodichloromethane	-	-	-	-	0.00	0.00	0.00	0.00
75-25-2	Bromoform	-	-	-	-	0.00	0.00	0.00	0.00
74-83-9	Bromomethane	-	-	-	-	0.00	0.00	0.00	0.00
106-94-5	Bromopropane, 1-	-	-	-	-	-	-	-	-
106-99-0	Butadiene, 1,3-	-	-	-	-	0.00	0.00	0.00	0.00
78-92-2	Butyl alcohol, sec-	-	-	-	-	-	-	-	-
111-76-2	Butyl Cellosolve (ethylene g	-	-	-	-	-	-	-	-
25013-16-5	Butylated hydroxyanisole	-	-	-	-	-	-	-	-
3068-88-0	Butyrolactone, beta-	-	-	-	-	-	-	-	-
7440-43-9	Cadmium	-	-	-	-	-	-	-	-
CADMIUM-CO	Cadmium Compounds	-	-	-	-	-	-	-	-
13765-19-0	Calcium Chromate	-	-	-	-	-	-	-	-
105-60-2	Caprolactum	-	-	-	-	-	-	-	-
75-15-0	Carbon disulfide	-	-	-	-	0.00	0.00	0.00	0.00
630-08-0	Carbon Monoxide	-	-	-	-	-	-	-	-
56-23-5	Carbon tetrachloride	-	-	-	-	0.00	0.00	0.00	0.00
463-58-1	Carbonyl sulfide	-	-	-	-	-	-	-	-
111-15-9	Cellosolve Acetate (ethylen	-	-	-	-	-	-	-	-
1306-38-3	Cerium Oxide and Cerium C	-	-	-	-	-	-	-	-
12789-03-6	Chlordane or (57-74-9)	-	-	-	-	-	-	-	-
115-28-6	Chlorendic acid	-	-	-	-	-	-	-	-
108171-26-2	Chlorinated Paraffins (C12,	-	-	-	-	-	-	-	-
7782-50-5	Chlorine	-	-	-	-	-	-	-	-

10049-04-4	Chlorine Oxide (CLO2)	-	-	-	-	-	-	-	-
75-68-3	Chloro-1,1-difluoroethane, 1	-	-	-	-	-	-	-	-
563-47-3	Chloro-2-methylpropene, 3-	-	-	-	-	-	-	-	-
95-83-0	Chloro-o-phenylenediamine	-	-	-	-	-	-	-	-
95-69-2	Chloro-o-toluidine, p-	-	-	-	-	-	-	-	-
532-27-4	Chloroacetophenone, 2-	-	-	-	-	-	-	-	-
108-90-7	Chlorobenzene	-	-	-	-	0.00	0.00	0.00	0.00
98-56-6	Chlorobenzotrifluoride, 4-	-	-	-	-	-	-	-	-
75-45-6	Chlorodifluoromethane (HC	-	-	-	-	-	-	-	-
67-66-3	Chloroform	-	-	-	-	0.00	0.00	0.00	0.00
107-30-2	Chloromethyl Methyl Ether	-	-	-	-	-	-	-	-
88-73-3	Chloronitrobenzene, o-	-	-	-	-	-	-	-	-
100-00-5	Chloronitrobenzene, p-	-	-	-	-	-	-	-	-
76-06-2	Chloropicrin	-	-	-	-	-	-	-	-
126-99-8	Chloroprene	-	-	-	-	-	-	-	-
1333-82-0	Chromic acid mists and diss	-	-	-	-	-	-	-	-
7440-47-3	Chromium	-	-	-	-	-	-	-	-
18540-29-9	Chromium (Hexavalent)	-	-	-	-	-	-	-	-
18540-29-9-p	Chromium (Hexavalent) - P	-	-	-	-	-	-	-	-
CHROM-COM	Chromium Compounds	-	-	-	-	-	-	-	-
16065-83-1	Chromium(III) Compounds	-	-	-	-	-	-	-	-
218-01-9	Chrysene (Benzo(a)phenan	-	-	-	-	-	-	-	-
87-29-6	Cinnamyl anthranilate	-	-	-	-	-	-	-	-
10061-01-5	cis-1,3-Dichloropropene	-	-	-	-	0.00	0.00	0.00	0.00
8007-45-2	Coal Tar	-	-	-	-	-	-	-	-
7440-48-4	Cobalt	-	-	-	-	-	-	-	-
0-00-7	Coke Oven Emissions	-	-	-	-	-	-	-	-
7440-50-8	Copper	-	-	-	-	-	-	-	-
COPPER-CO	Copper Compounds	-	-	-	-	-	-	-	-
120-71-8	Cresidine, p-	-	-	-	-	-	-	-	-
108-39-4	Cresol, m-	-	-	-	-	-	-	-	-
95-48-7	Cresol, o-	-	-	-	-	-	-	-	-
106-44-5	Cresol, p-	-	-	-	-	-	-	-	-
1319-77-3	Cresols/Cresylic acid (isome	-	-	-	-	-	-	-	-
98-82-8	Cumene	-	-	-	-	-	-	-	-
135-20-6	Cupferron	-	-	-	-	-	-	-	-
57-12-5	Cyanide (Cyanide ion, Inorg	-	-	-	-	-	-	-	-
CYANIDE-CO	Cyanide Compounds	-	-	-	-	-	-	-	-
110-82-7	Cyclohexane	-	-	-	-	0.00	0.00	0.00	0.00
108-94-1	Cyclohexanone	-	-	-	-	-	-	-	-
27208-37-3	Cyclopenta[c,d]pyrene	-	-	-	-	-	-	-	-
50-29-3	DDT	-	-	-	-	-	-	-	-
615-05-4	Diaminoanisole, 2,4-	-	-	-	-	-	-	-	-
101-80-4	Diaminodiphenyl ether, 4,4-	-	-	-	-	-	-	-	-
103-33-3	Diazene, Diphenyl	-	-	-	-	-	-	-	-
226-36-8	Dibenz(a,h)acridine	-	-	-	-	-	-	-	-
224-42-0	Dibenz(a,j)acridine	-	-	-	-	-	-	-	-
53-70-3	Dibenz[a,h]anthracene	-	-	-	-	-	-	-	-
192-65-4	Dibenzo(a,e)pyrene	-	-	-	-	-	-	-	-
189-64-0	Dibenzo(a,h)pyrene	-	-	-	-	-	-	-	-
191-30-0	Dibenzo(a,l)pyrene	-	-	-	-	-	-	-	-
194-59-2	Dibenzo(c,g)carbazole, 7H-	-	-	-	-	-	-	-	-
5385-75-1	Dibenzo[a,e]fluoranthene	-	-	-	-	-	-	-	-
189-55-9	Dibenzo[a,i]pyrene	-	-	-	-	-	-	-	-
96-12-8	Dibromo-3-chloropropane, 1	-	-	-	-	-	-	-	-
764-41-0	Dichloro-2-butene, 1,4-	-	-	-	-	-	-	-	-
1476-11-5	Dichloro-2-butene, cis-1,4-	-	-	-	-	-	-	-	-
106-46-7	Dichlorobenzene(p), 1,4-	-	-	-	-	0.00	0.00	0.00	0.00
25321-22-6	Dichlorobenzenes	-	-	-	-	-	-	-	-
91-94-1	Dichlorobenzidene, 3,3-	-	-	-	-	-	-	-	-
75-71-8	Dichlorodifluoromethane (C	-	-	-	-	0.01	0.00	0.00	0.00
75-35-4	Dichloroethylene (1,1-) (Vin	-	-	-	-	0.00	0.00	0.00	0.00
156-60-5	Dichloroethylene, trans-1,2-	-	-	-	-	0.16	0.05	0.01	0.01
542-75-6	Dichloropropene, 1,3-	-	-	-	-	-	-	-	-
78-88-6	Dichloropropene, 2,3-	-	-	-	-	-	-	-	-
62-73-7	Dichlorvos	-	-	-	-	-	-	-	-
77-73-6	Dicyclopentadiene	-	-	-	-	-	-	-	-
60-57-1	Dieldrin	-	-	-	-	-	-	-	-
0-02-4	Diesel exhaust particulate	-	-	-	-	-	-	-	-
111-42-2	Diethanolamine	-	-	-	-	-	-	-	-
112-34-5	Diethylene Glycol Monobuty	-	-	-	-	-	-	-	-
111-90-0	Diethylene Glycol Monoethy	-	-	-	-	-	-	-	-
75-37-6	Difluoroethane, 1,1-	-	-	-	-	-	-	-	-
108-20-3	Diisopropyl Ether	-	-	-	-	-	-	-	-
60-11-7	Dimethyl aminoazobenzene	-	-	-	-	-	-	-	-
68-12-2	Dimethyl formamide	-	-	-	-	-	-	-	-
108-01-0	Dimethylamino ethanol, 2-	-	-	-	-	-	-	-	-
57-97-6	Dimethylbenz[a]anthracene,	-	-	-	-	-	-	-	-
57-14-7	Dimethylhydrazine, 1,1-	-	-	-	-	-	-	-	-
42397-64-8	Dinitropyrene, 1,6- (BaP)	-	-	-	-	-	-	-	-
42397-65-9	Dinitropyrene, 1,8- (BaP)	-	-	-	-	-	-	-	-
121-14-2	Dinitrotoluene, 2,4-	-	-	-	-	-	-	-	-
123-91-1	Dioxane, 1,4- (1,4-Diethylen	-	-	-	-	-	-	-	-
122-66-7	Diphenylhydrazine, 1,2-	-	-	-	-	-	-	-	-
106-89-8	Epichlorohydrin (l-Chloro-2,	-	-	-	-	-	-	-	-
106-88-7	Epoxybutane, 1,2-	-	-	-	-	-	-	-	-
110-80-5	Ethoxyethanol, 2- (ethylene	-	-	-	-	-	-	-	-
141-78-6	Ethyl acetate	-	-	-	-	0.00	0.00	0.00	0.00
140-88-5	Ethyl Acrylate	-	-	-	-	-	-	-	-
100-41-4	Ethyl benzene	-	-	-	-	0.00	0.00	0.00	0.00
51-79-6	Ethyl carbamate (Urethane)	-	-	-	-	-	-	-	-

75-00-3	Ethyl chloride (Chloroethane	-	-	-	-	0.00	0.00	0.00	0.00
97-63-2	Ethyl Methacrylate	-	-	-	-	-	-	-	-
106-93-4	Ethylene dibromide (Dibrom	-	-	-	-	0.00	0.00	0.00	0.00
107-06-2	Ethylene dichloride (1,2-Dic	-	-	-	-	0.00	0.00	0.00	0.00
107-21-1	Ethylene glycol	-	-	-	-	-	-	-	-
75-21-8	Ethylene oxide	-	-	-	-	-	-	-	-
96-45-7	Ethylene thiourea	-	-	-	-	-	-	-	-
75-34-3	Ethylidene dichloride (1,1-D	-	-	-	-	0.00	0.00	0.00	0.00
206-44-0	Fluoranthene	-	-	-	-	-	-	-	-
FLUORIDES	Fluorides (except hydrogen	-	-	-	-	-	-	-	-
50-00-0	Formaldehyde	-	-	-	-	-	-	-	-
64-18-6	Formic Acid	-	-	-	-	-	-	-	-
111-30-8	Glutaraldehyde	-	-	-	-	-	-	-	-
0-01-2	Glycol ethers	-	-	-	-	-	-	-	-
76-44-8	Heptachlor	-	-	-	-	-	-	-	-
1024-57-3	Heptachlor epoxide	-	-	-	-	-	-	-	-
35822-46-9	Heptachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-5	Heptachlorodibenzodioxin,	-	-	-	-	-	-	-	-
67562-39-4	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
55673-89-7	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
00-08-4	Heptachlorodibenzofuran, A	-	-	-	-	-	-	-	-
142-82-5	Heptane, N	-	-	-	-	0.00	0.00	0.00	0.00
118-74-1	Hexachlorobenzene	-	-	-	-	-	-	-	-
87-68-3	Hexachlorobutadiene	-	-	-	-	0.00	0.00	0.00	0.00
608-73-1	Hexachlorocyclohexane (tec	-	-	-	-	-	-	-	-
319-84-6	Hexachlorocyclohexane, alp	-	-	-	-	-	-	-	-
319-85-7	Hexachlorocyclohexane, be	-	-	-	-	-	-	-	-
77-47-4	Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-
39227-28-6	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
57653-85-7	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
19408-74-3	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-3	Hexachlorodibenzodioxins,	-	-	-	-	-	-	-	-
70648-26-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
57117-44-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
72918-21-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
60851-34-5	Hexachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-
00-08-2	Hexachlorodibenzofurans, A	-	-	-	-	-	-	-	-
67-72-1	Hexachloroethane	-	-	-	-	-	-	-	-
822-06-0	Hexamethylene-1,6-diisocya	-	-	-	-	-	-	-	-
110-54-3	Hexane	-	-	-	-	0.00	0.00	0.00	0.00
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl	-	-	-	-	-	-	-	-
591-78-6	Hexanone-2	-	-	-	-	0.00	0.00	0.00	0.00
302-01-2	Hydrazine	-	-	-	-	-	-	-	-
10034-93-2	Hydrazine sulfate	-	-	-	-	-	-	-	-
7647-01-0	Hydrochloric acid (hydrogen	-	-	-	-	-	-	-	-
74-90-8	Hydrogen cyanide	-	-	-	-	-	-	-	-
7664-39-3	Hydrogen fluoride (Hydroflu	-	-	-	-	-	-	-	-
7783-07-5	Hydrogen selenide	-	-	-	-	-	-	-	-
7783-06-4	Hydrogen sulfide	-	-	-	-	-	-	-	-
193-39-5	Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-
5888-33-5	Isobornyl acrylate	0.70	0.21	0.06	0.04	-	-	-	-
78-59-1	Isophorone	-	-	-	-	-	-	-	-
67-63-0	Isopropyl alcohol	-	-	-	-	0.00	0.00	0.00	0.00
7439-92-1	Lead	-	-	-	-	-	-	-	-
7758-97-6	Lead Chromate	-	-	-	-	-	-	-	-
LEAD-COMP	Lead Compounds	-	-	-	-	-	-	-	-
58-89-9	Lindane (all isomers)	-	-	-	-	-	-	-	-
108-31-6	Maleic anhydride	-	-	-	-	-	-	-	-
7439-96-5	Manganese	-	-	-	-	-	-	-	-
MANGANESE	Manganese Compounds	-	-	-	-	-	-	-	-
7439-97-6	Mercury (elemental)	-	-	-	-	-	-	-	-
MERCURY-C	Mercury Compounds	-	-	-	-	-	-	-	-
126-98-7	Methacrylonitrile	-	-	-	-	-	-	-	-
67-56-1	Methanol	-	-	-	-	-	-	-	-
109-86-4	Methoxyethanol, 2- (ethylen	-	-	-	-	-	-	-	-
96-33-3	Methyl acrylate	-	-	-	-	-	-	-	-
110-49-6	Methyl Cellosolve Acetate	-	-	-	-	-	-	-	-
74-87-3	Methyl chloride (Chlorometh	-	-	-	-	0.00	0.00	0.00	0.00
71-55-6	Methyl chloroform (1,1,1-Tri	-	-	-	-	0.02	0.01	0.00	0.00
78-93-3	Methyl ethyl ketone (2-Buta	-	-	-	-	0.00	0.00	0.00	0.00
60-34-4	Methyl Hydrazine	-	-	-	-	-	-	-	-
108-10-1	Methyl isobutyl ketone (Hex	-	-	-	-	0.00	0.00	0.00	0.00
624-83-9	Methyl isocyanate	-	-	-	-	-	-	-	-
80-62-6	Methyl methacrylate	-	-	-	-	-	-	-	-
1634-04-4	Methyl tert butyl ether	-	-	-	-	0.00	0.00	0.00	0.00
56-49-5	Methylcholanthrene, 3-	-	-	-	-	-	-	-	-
3697-24-3	Methylchrysene, 5-	-	-	-	-	-	-	-	-
101-14-4	Methylene bis(2-chloroanilin	-	-	-	-	-	-	-	-
74-95-3	Methylene Bromide	-	-	-	-	-	-	-	-
75-09-2	Methylene chloride (Dichlor	-	-	-	-	0.00	0.00	0.00	0.00
101-68-8	Methylene diphenyl diisocya	-	-	-	-	-	-	-	-
101-77-9	Methylenedianiline, 4,4-	-	-	-	-	-	-	-	-
90-94-8	Michler's ketone	-	-	-	-	-	-	-	-
10595-95-6	N- Nitrosomethylethylamine	-	-	-	-	-	-	-	-
924-16-3	N-Nitrosodi-n-butylamine	-	-	-	-	-	-	-	-
621-64-7	N-Nitrosodi-n-propylamine	-	-	-	-	-	-	-	-
55-18-5	N-Nitrosodiethylamine	-	-	-	-	-	-	-	-
62-75-9	N-Nitrosodimethylamine	-	-	-	-	-	-	-	-
86-30-6	N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-
59-89-2	N-Nitrosomorpholine	-	-	-	-	-	-	-	-
100-75-4	N-Nitrosopiperidine	-	-	-	-	-	-	-	-

111-84-2	N-Nonane	-	-	-	-	-	-	-	-
64724-95-6	Naphtha, High Flash Aroma	-	-	-	-	-	-	-	-
91-20-3	Naphthalene	-	-	-	-	0.00	0.00	0.00	0.00
193-09-9	Naphtho[2,3-e]pyrene	-	-	-	-	-	-	-	-
7440-02-0	Nickel	-	-	-	-	-	-	-	-
NICKEL-COM	Nickel Compounds	-	-	-	-	-	-	-	-
1313-99-1	Nickel oxide	-	-	-	-	-	-	-	-
0-02-5	Nickel refinery dust from the	-	-	-	-	-	-	-	-
12035-72-2	Nickel sulfide (NI3S2)	-	-	-	-	-	-	-	-
7697-37-2	Nitric acid	-	-	-	-	-	-	-	-
139-13-9	Nitrilotriacetic acid	-	-	-	-	-	-	-	-
18662-53-8	Nitrilotriacetic acid, trisodiu	-	-	-	-	-	-	-	-
602-87-9	Nitroacenaphthene, 5-	-	-	-	-	-	-	-	-
88-74-4	Nitroaniline, 2-	-	-	-	-	-	-	-	-
100-01-6	Nitroaniline, 4-	-	-	-	-	-	-	-	-
98-95-3	Nitrobenzene	-	-	-	-	-	-	-	-
7496-02-8	Nitrochrysene, 6-	-	-	-	-	-	-	-	-
607-57-8	Nitrofluorene, 2-	-	-	-	-	-	-	-	-
10102-44-0	Nitrogen dioxide (NO2)	-	-	-	-	-	-	-	-
75-52-5	Nitromethane	-	-	-	-	-	-	-	-
79-46-9	Nitropropane, 2-	-	-	-	-	-	-	-	-
5522-43-0	Nitropyrene, 1-	-	-	-	-	-	-	-	-
57835-92-4	Nitropyrene, 4-	-	-	-	-	-	-	-	-
156-10-5	Nitrosodiphenylamine, p-	-	-	-	-	-	-	-	-
3268-87-9	Octachlorodibenzo-p-dioxin,	-	-	-	-	-	-	-	-
39001-02-0	Octachlorodibenzofuran, 1,2	-	-	-	-	-	-	-	-
10028-15-6	Ozone	-	-	-	-	-	-	-	-
74472-37-0	PCB 114 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
31508-00-6	PCB 118 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
65510-44-3	PCB 123 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
57465-28-8	PCB 126 (3,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
38380-0804	PCB 156 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Hep	-	-	-	-	-	-	-	-
32598-13-3	PCB 77 (3,3,4,4-Tetrachloro	-	-	-	-	-	-	-	-
70362-50-4	PCB 81 (3,4,4,5 Tetrachloro	-	-	-	-	-	-	-	-
32598-14-4	PCB105 (2,3,3,4,4 Pentachl	-	-	-	-	-	-	-	-
40321-76-4	Pentachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-1	Pentachlorodibenzodioxins,	-	-	-	-	-	-	-	-
57117-41-6	Pentachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
57117-31-4	Pentachlorodibenzofuran, 2	-	-	-	-	-	-	-	-
00-09-0	Pentachlorodibenzofurans,	-	-	-	-	-	-	-	-
87-86-5	Pentachlorophenol	-	-	-	-	-	-	-	-
109-66-0	Pentane, n-	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
85-01-8	Phenanthrene	-	-	-	-	-	-	-	-
108-95-2	Phenol	-	-	-	-	-	-	-	-
75-44-5	Phosgene	-	-	-	-	-	-	-	-
7803-51-2	Phosphine	-	-	-	-	-	-	-	-
7664-38-2	Phosphoric acid	-	-	-	-	-	-	-	-
85-44-9	Phthalic anhydride	-	-	-	-	-	-	-	-
59536-65-1	Polybrominated Biphenyls	-	-	-	-	-	-	-	-
1336-36-3	Polychlorinated biphenyls (A	-	-	-	-	-	-	-	-
00-08-0	Polychlorinated Dibenzo-P-	-	-	-	-	-	-	-	-
00-05-0	Polychlorinated Dibenzodio	-	-	-	-	-	-	-	-
00-05-1	Polychlorinated Dibenzofura	-	-	-	-	-	-	-	-
130498-29-2	Polycyclic Aromatic Hydroca	-	-	-	-	-	-	-	-
00-01-7	Polycyclic Organic Matter (P	-	-	-	-	-	-	-	-
9016-87-9	Polymeric diphenylmethane	-	-	-	-	-	-	-	-
7758-01-2	Potassium bromate	-	-	-	-	-	-	-	-
1120-71-4	Propane sultone, 1,3-	-	-	-	-	-	-	-	-
57-57-8	Propiolactone, beta-	-	-	-	-	-	-	-	-
123-38-6	Propionaldehyde	-	-	-	-	-	-	-	-
115-07-1	Propylene	-	-	-	-	0.00	0.00	0.00	0.00
78-87-5	Propylene dichloride (1,2-Di	-	-	-	-	0.00	0.00	0.00	0.00
107-98-2	Propylene Glycol Monometh	-	-	-	-	-	-	-	-
75-56-9	Propylene oxide	-	-	-	-	-	-	-	-
930-55-2	Pyrrolidine, 1-Nitroso-	-	-	-	-	-	-	-	-
7782-49-2	Selenium	-	-	-	-	-	-	-	-
0-01-9	Selenium Compounds	-	-	-	-	-	-	-	-
7631-86-9	Silica (crystalline, respirable	-	-	-	-	-	-	-	-
1310-73-2	Sodium hydroxide	-	-	-	-	-	-	-	-
10588-01-9	Sodium Dichromate	-	-	-	-	-	-	-	-
7789-06-2	Strontium chromate	-	-	-	-	-	-	-	-
100-42-5	Styrene	-	-	-	-	0.00	0.00	0.00	0.00
96-09-3	Styrene oxide	-	-	-	-	-	-	-	-
14808-79-8	Sulfates	-	-	-	-	-	-	-	-
126-33-0	Sulfolane	-	-	-	-	-	-	-	-
7446-09-5	Sulfur dioxide	-	-	-	-	-	-	-	-
7664-93-9	Sulfuric acid (aerosol forms	-	-	-	-	-	-	-	-
8014-95-7	Sulfuric Acid mixture w. sulf	-	-	-	-	-	-	-	-
00-09-1	TCDD Eqivalents, 2,3,7,8-	-	-	-	-	-	-	-	-
540-88-5	Tert-Butyl Acetate	-	-	-	-	-	-	-	-
1746-01-6	Tetrachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-8	Tetrachlorodibenzodioxins,	-	-	-	-	-	-	-	-
51207-31-9	Tetrachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-

00-08-6	Tetrachlorodibenzofurans, A	-	-	-	-	-	-	-	-
630-20-6	Tetrachloroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
79-34-5	Tetrachloroethane, 1,1,2,2-	-	-	-	-	0.00	0.00	0.00	0.00
127-18-4	Tetrachloroethylene (Perchl	-	-	-	-	0.00	0.00	0.00	0.00
811-97-2	Tetrafluoroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
109-99-9	Tetrahydrofuran	-	-	-	-	0.00	0.00	0.00	0.00
62-55-5	Thioacetamide	-	-	-	-	-	-	-	-
62-56-6	Thiourea	-	-	-	-	-	-	-	-
108-88-3	Toluene	-	-	-	-	0.00	0.00	0.00	0.00
584-84-9	Toluene-2,4-diisocyanate	-	-	-	-	-	-	-	-
91-08-7	Toluene-2,6-diisocyanate	-	-	-	-	-	-	-	-
95-80-7	Toluene diamine, 2,4-	-	-	-	-	-	-	-	-
26471-62-5	Toluenediisocyanate (mixed	-	-	-	-	-	-	-	-
95-53-4	Toluidine, o- (Methylaniline,	-	-	-	-	-	-	-	-
8001-35-2	Toxaphene (chlorinated ca	-	-	-	-	-	-	-	-
10061-02-6	trans-1,3-Dichloropropene	-	-	-	-	0.00	0.00	0.00	0.00
120-82-1	Trichlorobenzene, 1,2,4-	-	-	-	-	0.01	0.00	0.00	0.00
79-00-5	Trichloroethane, 1,1,2-	-	-	-	-	0.00	0.00	0.00	0.00
79-01-6	Trichloroethylene (TCE)	-	-	-	-	0.01	0.00	0.00	0.00
75-69-4	Trichlorofluoromethane (CF	-	-	-	-	0.00	0.00	0.00	0.00
88-06-2	Trichlorophenol, 2,4,6-	-	-	-	-	-	-	-	-
96-18-4	Trichloropropane, 1,2,3-	-	-	-	-	-	-	-	-
96-19-5	Trichloropropene, 1,2,3-	-	-	-	-	-	-	-	-
76-13-1	Trichlorotrifluoroethane, 1,1	-	-	-	-	0.00	0.00	0.00	0.00
121-44-8	Triethylamine	-	-	-	-	-	-	-	-
420-46-2	Trifluoroethane, 1,1,1-	-	-	-	-	-	-	-	-
526-73-8	Trimethylbenzene, 1,2,3-	-	-	-	-	-	-	-	-
95-63-6	Trimethylbenzene, 1,2,4-	-	-	-	-	0.00	0.00	0.00	0.00
108-67-8	Trimethylbenzene, 1,3,5-	-	-	-	-	0.00	0.00	0.00	0.00
URANIUM-SO	Uranium (Soluble Salts)	-	-	-	-	-	-	-	-
7440-61-1	Uranium, Insoluble Compou	-	-	-	-	-	-	-	-
7440-62-2	Vanadium and Compounds	-	-	-	-	-	-	-	-
1314-62-1	Vanadium Pentoxide, (V2O	-	-	-	-	-	-	-	-
108-05-4	Vinyl acetate	-	-	-	-	0.00	0.00	0.00	0.00
593-60-2	Vinyl bromide	-	-	-	-	-	-	-	-
75-01-4	Vinyl chloride	-	-	-	-	0.00	0.00	0.00	0.00
1330-20-7	Xylenes	-	-	-	-	0.00	0.00	0.00	0.00
108-38-3	Xylenes, m-	-	-	-	-	-	-	-	-
95-47-6	Xylenes, o-	-	-	-	-	-	-	-	-
106-42-3	Xylenes, p-	-	-	-	-	-	-	-	-
13530-65-9	Zinc chromate	-	-	-	-	-	-	-	-

RASS version: 2020-12

No inputs needed on this page

Air Concentrations in ug/m3

		Stack #28				Stack #29			
CAS# or MPCA#	**Chemical Name**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**
202-94-8	11H-Benz[b,c]aceanthrylene	-	-	-	-	-	-	-	-
202-98-2	4H-Cyclopenta[d,e,f]chrysen	-	-	-	-	-	-	-	-
75-07-0	Acetaldehyde	-	-	-	-	-	-	-	-
60-35-5	Acetamide	-	-	-	-	-	-	-	-
67-64-1	Acetone	-	-	-	-	-	-	-	-
75-86-5	Acetone Cyanohydrin	-	-	-	-	-	-	-	-
75-05-8	Acetonitrile	-	-	-	-	-	-	-	-
53-96-3	Acetylaminofluorene, 2-	-	-	-	-	-	-	-	-
107-02-8	Acrolein	-	-	-	-	-	-	-	-
79-06-1	Acrylamide	-	-	-	-	-	-	-	-
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-	-	-	-	-	-	-	-	-
79-10-7	Acrylic acid	-	-	-	-	-	-	-	-
107-13-1	Acrylonitrile	-	-	-	-	-	-	-	-
111-69-3	Adiponitrile	-	-	-	-	-	-	-	-
ALDEHYDES	Aldehydes	-	-	-	-	-	-	-	-
309-00-2	Aldrin	-	-	-	-	-	-	-	-
ALIPHATIC-M	Aliphatic Hydrocarbon Strea	-	-	-	-	-	-	-	-
107-05-1	Allyl chloride	-	-	-	-	-	-	-	-
7429-90-5	Aluminum	-	-	-	-	-	-	-	-
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3	-	-	-	-	-	-	-	-
6109-97-3	Amino-9-ethylcarbazolehydr	-	-	-	-	-	-	-	-
117-79-3	Aminoanthraquinone, 2-	-	-	-	-	-	-	-	-
7664-41-7	Ammonia	-	-	-	-	-	-	-	-
62-53-3	Aniline	-	-	-	-	-	-	-	-
191-26-4	Anthanthrene	-	-	-	-	-	-	-	-
7440-36-0	Antimony	-	-	-	-	-	-	-	-
ANTIMONY-C	Antimony Compounds	-	-	-	-	-	-	-	-
1309-64-4	Antimony trioxide	-	-	-	-	-	-	-	-
140-57-8	Aramite	-	-	-	-	-	-	-	-
7440-38-2	Arsenic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ARSENIC-CO	Arsenic Compounds	-	-	-	-	-	-	-	-
1327-53-3	Arsenic Trioxide	-	-	-	-	-	-	-	-
7784-42-1	Arsine	-	-	-	-	-	-	-	-
1332-21-4	Asbestos (units in fibers)	-	-	-	-	-	-	-	-
1332-21-4-LA	Asbestos, Libby Amphibole	-	-	-	-	-	-	-	-
123-77-3	Azodicarbonamide	-	-	-	-	-	-	-	-
10294-40-3	Barium Chromate	-	-	-	-	-	-	-	-
199-54-2	Benz[e]aceanthrylene	-	-	-	-	-	-	-	-
202-33-5	Benz[j]aceanthrylene	-	-	-	-	-	-	-	-
211-91-6	Benz[l]aceanthrylene	-	-	-	-	-	-	-	-
71-43-2	Benzene	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
92-87-5	Benzidine	-	-	-	-	-	-	-	-
205-82-3	Benzo(j)fluoranthene	-	-	-	-	-	-	-	-
207-08-9	Benzo(k)fluoranthene	-	-	-	-	-	-	-	-
56-55-3	Benzo[a]anthracene	-	-	-	-	-	-	-	-
50-32-8	Benzo[a]pyrene	-	-	-	-	-	-	-	-
205-99-2	Benzo[b]fluoranthene	-	-	-	-	-	-	-	-
205-12-9	Benzo[c]fluorene	-	-	-	-	-	-	-	-
191-24-2	Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-
65-85-0	Benzoic Acid	-	-	-	-	-	-	-	-
100-44-7	Benzyl chloride	-	-	-	-	-	-	-	-
7440-41-7	Beryllium	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BERYLLIUM-	Beryllium Compounds	-	-	-	-	-	-	-	-
13510-49-1	Beryllium sulfate	-	-	-	-	-	-	-	-
111-44-4	Bis(2-chloroethyl)ether	-	-	-	-	-	-	-	-
117-81-7	Bis(2-ethylhexyl)phthalate (	-	-	-	-	-	-	-	-
542-88-1	Bis(chloromethyl)ether	-	-	-	-	-	-	-	-
7440-42-8	Boron And Borates Only	-	-	-	-	-	-	-	-
10294-34-5	Boron Trichloride	-	-	-	-	-	-	-	-
7637-07-2	Boron Trifluoride	-	-	-	-	-	-	-	-
108-86-1	Bromobenzene	-	-	-	-	-	-	-	-
74-97-5	Bromochloromethane	-	-	-	-	-	-	-	-
75-27-4	Bromodichloromethane	-	-	-	-	-	-	-	-
75-25-2	Bromoform	-	-	-	-	-	-	-	-
74-83-9	Bromomethane	-	-	-	-	-	-	-	-
106-94-5	Bromopropane, 1-	-	-	-	-	-	-	-	-
106-99-0	Butadiene, 1,3-	-	-	-	-	-	-	-	-
78-92-2	Butyl alcohol, sec-	-	-	-	-	-	-	-	-
111-76-2	Butyl Cellosolve (ethylene g	-	-	-	-	-	-	-	-
25013-16-5	Butylated hydroxyanisole	-	-	-	-	-	-	-	-
3068-88-0	Butyrolactone, beta-	-	-	-	-	-	-	-	-
7440-43-9	Cadmium	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CADMIUM-CO	Cadmium Compounds	-	-	-	-	-	-	-	-
13765-19-0	Calcium Chromate	-	-	-	-	-	-	-	-
105-60-2	Caprolactum	-	-	-	-	-	-	-	-
75-15-0	Carbon disulfide	-	-	-	-	-	-	-	-
630-08-0	Carbon Monoxide	10.33	3.37	0.79	0.48	27.18	6.35	1.57	0.54
56-23-5	Carbon tetrachloride	-	-	-	-	-	-	-	-
463-58-1	Carbonyl sulfide	-	-	-	-	-	-	-	-
111-15-9	Cellosolve Acetate (ethylen	-	-	-	-	-	-	-	-
1306-38-3	Cerium Oxide and Cerium C	-	-	-	-	-	-	-	-
12789-03-6	Chlordane or (57-74-9)	-	-	-	-	-	-	-	-
115-28-6	Chlorendic acid	-	-	-	-	-	-	-	-
108171-26-2	Chlorinated Paraffins (C12,	-	-	-	-	-	-	-	-
7782-50-5	Chlorine	-	-	-	-	-	-	-	-

10049-04-4	Chlorine Oxide (CLO2)	-	-	-	-	-	-	-	-
75-68-3	Chloro-1,1-difluoroethane, 1	-	-	-	-	-	-	-	-
563-47-3	Chloro-2-methylpropene, 3-	-	-	-	-	-	-	-	-
95-83-0	Chloro-o-phenylenediamine	-	-	-	-	-	-	-	-
95-69-2	Chloro-o-toluidine, p-	-	-	-	-	-	-	-	-
532-27-4	Chloroacetophenone, 2-	-	-	-	-	-	-	-	-
108-90-7	Chlorobenzene	-	-	-	-	-	-	-	-
98-56-6	Chlorobenzotrifluoride, 4-	-	-	-	-	-	-	-	-
75-45-6	Chlorodifluoromethane (HC	-	-	-	-	-	-	-	-
67-66-3	Chloroform	-	-	-	-	-	-	-	-
107-30-2	Chloromethyl Methyl Ether	-	-	-	-	-	-	-	-
88-73-3	Chloronitrobenzene, o-	-	-	-	-	-	-	-	-
100-00-5	Chloronitrobenzene, p-	-	-	-	-	-	-	-	-
76-06-2	Chloropicrin	-	-	-	-	-	-	-	-
126-99-8	Chloroprene	-	-	-	-	-	-	-	-
1333-82-0	Chromic acid mists and diss	-	-	-	-	-	-	-	-
7440-47-3	Chromium	-	-	-	-	-	-	-	-
18540-29-9	Chromium (Hexavalent)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18540-29-9-p	Chromium (Hexavalent) - P	-	-	-	-	-	-	-	-
CHROM-COM	Chromium Compounds	-	-	-	-	-	-	-	-
16065-83-1	Chromium(III) Compounds	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
218-01-9	Chrysene (Benzo(a)phenan	-	-	-	-	-	-	-	-
87-29-6	Cinnamyl anthranilate	-	-	-	-	-	-	-	-
10061-01-5	cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-
8007-45-2	Coal Tar	-	-	-	-	-	-	-	-
7440-48-4	Cobalt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0-00-7	Coke Oven Emissions	-	-	-	-	-	-	-	-
7440-50-8	Copper	-	-	-	-	-	-	-	-
COPPER-CO	Copper Compounds	-	-	-	-	-	-	-	-
120-71-8	Cresidine, p-	-	-	-	-	-	-	-	-
108-39-4	Cresol, m-	-	-	-	-	-	-	-	-
95-48-7	Cresol, o-	-	-	-	-	-	-	-	-
106-44-5	Cresol, p-	-	-	-	-	-	-	-	-
1319-77-3	Cresols/Cresylic acid (isome	-	-	-	-	-	-	-	-
98-82-8	Cumene	-	-	-	-	-	-	-	-
135-20-6	Cupferron	-	-	-	-	-	-	-	-
57-12-5	Cyanide (Cyanide ion, Inorg	-	-	-	-	-	-	-	-
CYANIDE-CO	Cyanide Compounds	-	-	-	-	-	-	-	-
110-82-7	Cyclohexane	-	-	-	-	-	-	-	-
108-94-1	Cyclohexanone	-	-	-	-	-	-	-	-
27208-37-3	Cyclopenta[c,d]pyrene	-	-	-	-	-	-	-	-
50-29-3	DDT	-	-	-	-	-	-	-	-
615-05-4	Diaminoanisole, 2,4-	-	-	-	-	-	-	-	-
101-80-4	Diaminodiphenyl ether, 4,4-	-	-	-	-	-	-	-	-
103-33-3	Diazene, Diphenyl	-	-	-	-	-	-	-	-
226-36-8	Dibenz(a,h)acridine	-	-	-	-	-	-	-	-
224-42-0	Dibenz(a,j)acridine	-	-	-	-	-	-	-	-
53-70-3	Dibenz[a,h]anthracene	-	-	-	-	-	-	-	-
192-65-4	Dibenzo(a,e)pyrene	-	-	-	-	-	-	-	-
189-64-0	Dibenzo(a,h)pyrene	-	-	-	-	-	-	-	-
191-30-0	Dibenzo(a,l)pyrene	-	-	-	-	-	-	-	-
194-59-2	Dibenzo(c,g)carbazole, 7H-	-	-	-	-	-	-	-	-
5385-75-1	Dibenzo[a,e]fluoranthene	-	-	-	-	-	-	-	-
189-55-9	Dibenzo[a,i]pyrene	-	-	-	-	-	-	-	-
96-12-8	Dibromo-3-chloropropane, 1	-	-	-	-	-	-	-	-
764-41-0	Dichloro-2-butene, 1,4-	-	-	-	-	-	-	-	-
1476-11-5	Dichloro-2-butene, cis-1,4-	-	-	-	-	-	-	-	-
106-46-7	Dichlorobenzene(p), 1,4-	-	-	-	-	-	-	-	-
25321-22-6	Dichlorobenzenes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
91-94-1	Dichlorobenzidene, 3,3-	-	-	-	-	-	-	-	-
75-71-8	Dichlorodifluoromethane (C	-	-	-	-	-	-	-	-
75-35-4	Dichloroethylene (1,1-) (Vin	-	-	-	-	-	-	-	-
156-60-5	Dichloroethylene, trans-1,2-	-	-	-	-	0.02	0.01	0.00	0.00
542-75-6	Dichloropropene, 1,3-	-	-	-	-	-	-	-	-
78-88-6	Dichloropropene, 2,3-	-	-	-	-	-	-	-	-
62-73-7	Dichlorvos	-	-	-	-	-	-	-	-
77-73-6	Dicyclopentadiene	-	-	-	-	-	-	-	-
60-57-1	Dieldrin	-	-	-	-	-	-	-	-
0-02-4	Diesel exhaust particulate	-	-	-	-	-	-	-	-
111-42-2	Diethanolamine	-	-	-	-	-	-	-	-
112-34-5	Diethylene Glycol Monobuty	-	-	-	-	-	-	-	-
111-90-0	Diethylene Glycol Monoethy	-	-	-	-	-	-	-	-
75-37-6	Difluoroethane, 1,1-	-	-	-	-	-	-	-	-
108-20-3	Diisopropyl Ether	-	-	-	-	-	-	-	-
60-11-7	Dimethyl aminoazobenzene	-	-	-	-	-	-	-	-
68-12-2	Dimethyl formamide	-	-	-	-	-	-	-	-
108-01-0	Dimethylamino ethanol, 2-	-	-	-	-	-	-	-	-
57-97-6	Dimethylbenz[a]anthracene,	-	-	-	-	-	-	-	-
57-14-7	Dimethylhydrazine, 1,1-	-	-	-	-	-	-	-	-
42397-64-8	Dinitropyrene, 1,6- (BaP)	-	-	-	-	-	-	-	-
42397-65-9	Dinitropyrene, 1,8- (BaP)	-	-	-	-	-	-	-	-
121-14-2	Dinitrotoluene, 2,4-	-	-	-	-	-	-	-	-
123-91-1	Dioxane, 1,4- (1,4-Diethylen	-	-	-	-	-	-	-	-
122-66-7	Diphenylhydrazine, 1,2-	-	-	-	-	-	-	-	-
106-89-8	Epichlorohydrin (l-Chloro-2,	-	-	-	-	-	-	-	-
106-88-7	Epoxybutane, 1,2-	-	-	-	-	-	-	-	-
110-80-5	Ethoxyethanol, 2- (ethylene	-	-	-	-	-	-	-	-
141-78-6	Ethyl acetate	-	-	-	-	-	-	-	-
140-88-5	Ethyl Acrylate	-	-	-	-	-	-	-	-
100-41-4	Ethyl benzene	-	-	-	-	-	-	-	-
51-79-6	Ethyl carbamate (Urethane)	-	-	-	-	-	-	-	-

75-00-3	Ethyl chloride (Chloroethane	-	-	-	-	-	-	-	-
97-63-2	Ethyl Methacrylate	-	-	-	-	-	-	-	-
106-93-4	Ethylene dibromide (Dibrom	-	-	-	-	-	-	-	-
107-06-2	Ethylene dichloride (1,2-Dic	-	-	-	-	-	-	-	-
107-21-1	Ethylene glycol	-	-	-	-	-	-	-	-
75-21-8	Ethylene oxide	-	-	-	-	-	-	-	-
96-45-7	Ethylene thiourea	-	-	-	-	-	-	-	-
75-34-3	Ethylidene dichloride (1,1-D	-	-	-	-	-	-	-	-
206-44-0	Fluoranthene	-	-	-	-	-	-	-	-
FLUORIDES	Fluorides (except hydrogen	-	-	-	-	-	-	-	-
50-00-0	Formaldehyde	0.01	0.00	0.00	0.00	0.02	0.01	0.00	0.00
64-18-6	Formic Acid	-	-	-	-	-	-	-	-
111-30-8	Glutaraldehyde	-	-	-	-	-	-	-	-
0-01-2	Glycol ethers	-	-	-	-	-	-	-	-
76-44-8	Heptachlor	-	-	-	-	-	-	-	-
1024-57-3	Heptachlor epoxide	-	-	-	-	-	-	-	-
35822-46-9	Heptachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-5	Heptachlorodibenzodioxin,	-	-	-	-	-	-	-	-
67562-39-4	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
55673-89-7	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
00-08-4	Heptachlorodibenzofuran, A	-	-	-	-	-	-	-	-
142-82-5	Heptane, N	-	-	-	-	-	-	-	-
118-74-1	Hexachlorobenzene	-	-	-	-	-	-	-	-
87-68-3	Hexachlorobutadiene	-	-	-	-	-	-	-	-
608-73-1	Hexachlorocyclohexane (tec	-	-	-	-	-	-	-	-
319-84-6	Hexachlorocyclohexane, alp	-	-	-	-	-	-	-	-
319-85-7	Hexachlorocyclohexane, be	-	-	-	-	-	-	-	-
77-47-4	Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-
39227-28-6	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
57653-85-7	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
19408-74-3	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-3	Hexachlorodibenzodioxins,	-	-	-	-	-	-	-	-
70648-26-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
57117-44-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
72918-21-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
60851-34-5	Hexachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-
00-08-2	Hexachlorodibenzofurans, A	-	-	-	-	-	-	-	-
67-72-1	Hexachloroethane	-	-	-	-	-	-	-	-
822-06-0	Hexamethylene-1,6-diisocya	-	-	-	-	-	-	-	-
110-54-3	Hexane	0.22	0.07	0.02	0.01	0.58	0.14	0.03	0.01
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl	-	-	-	-	-	-	-	-
591-78-6	Hexanone-2	-	-	-	-	-	-	-	-
302-01-2	Hydrazine	-	-	-	-	-	-	-	-
10034-93-2	Hydrazine sulfate	-	-	-	-	-	-	-	-
7647-01-0	Hydrochloric acid (hydrogen	-	-	-	-	-	-	-	-
74-90-8	Hydrogen cyanide	-	-	-	-	-	-	-	-
7664-39-3	Hydrogen fluoride (Hydroflu	-	-	-	-	-	-	-	-
7783-07-5	Hydrogen selenide	-	-	-	-	-	-	-	-
7783-06-4	Hydrogen sulfide	-	-	-	-	-	-	-	-
193-39-5	Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-
5888-33-5	Isobornyl acrylate	-	-	-	-	-	-	-	-
78-59-1	Isophorone	-	-	-	-	-	-	-	-
67-63-0	Isopropyl alcohol	-	-	-	-	-	-	-	-
7439-92-1	Lead	-	-	-	-	-	-	-	-
7758-97-6	Lead Chromate	-	-	-	-	-	-	-	-
LEAD-COMP	Lead Compounds	-	-	-	-	-	-	-	-
58-89-9	Lindane (all isomers)	-	-	-	-	-	-	-	-
108-31-6	Maleic anhydride	-	-	-	-	-	-	-	-
7439-96-5	Manganese	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MANGANESE	Manganese Compounds	-	-	-	-	-	-	-	-
7439-97-6	Mercury (elemental)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MERCURY-C	Mercury Compounds	-	-	-	-	-	-	-	-
126-98-7	Methacrylonitrile	-	-	-	-	-	-	-	-
67-56-1	Methanol	-	-	-	-	-	-	-	-
109-86-4	Methoxyethanol, 2- (ethylen	-	-	-	-	-	-	-	-
96-33-3	Methyl acrylate	-	-	-	-	-	-	-	-
110-49-6	Methyl Cellosolve Acetate	-	-	-	-	-	-	-	-
74-87-3	Methyl chloride (Chlorometh	-	-	-	-	-	-	-	-
71-55-6	Methyl chloroform (1,1,1-Tri	-	-	-	-	-	-	-	-
78-93-3	Methyl ethyl ketone (2-Buta	-	-	-	-	-	-	-	-
60-34-4	Methyl Hydrazine	-	-	-	-	-	-	-	-
108-10-1	Methyl isobutyl ketone (Hex	-	-	-	-	-	-	-	-
624-83-9	Methyl isocyanate	-	-	-	-	-	-	-	-
80-62-6	Methyl methacrylate	-	-	-	-	-	-	-	-
1634-04-4	Methyl tert butyl ether	-	-	-	-	-	-	-	-
56-49-5	Methylcholanthrene, 3-	-	-	-	-	-	-	-	-
3697-24-3	Methylchrysene, 5-	-	-	-	-	-	-	-	-
101-14-4	Methylene bis(2-chloroanilin	-	-	-	-	-	-	-	-
74-95-3	Methylene Bromide	-	-	-	-	-	-	-	-
75-09-2	Methylene chloride (Dichlor	-	-	-	-	-	-	-	-
101-68-8	Methylene diphenyl diisocya	-	-	-	-	-	-	-	-
101-77-9	Methylenedianiline, 4,4-	-	-	-	-	-	-	-	-
90-94-8	Michler's ketone	-	-	-	-	-	-	-	-
10595-95-6	N- Nitrosomethylethylamine	-	-	-	-	-	-	-	-
924-16-3	N-Nitrosodi-n-butylamine	-	-	-	-	-	-	-	-
621-64-7	N-Nitrosodi-n-propylamine	-	-	-	-	-	-	-	-
55-18-5	N-Nitrosodiethylamine	-	-	-	-	-	-	-	-
62-75-9	N-Nitrosodimethylamine	-	-	-	-	-	-	-	-
86-30-6	N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-
59-89-2	N-Nitrosomorpholine	-	-	-	-	-	-	-	-
100-75-4	N-Nitrosopiperidine	-	-	-	-	-	-	-	-

111-84-2	N-Nonane	-	-	-	-	-	-	-	-
64724-95-6	Naphtha, High Flash Aroma	-	-	-	-	-	-	-	-
91-20-3	Naphthalene	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
193-09-9	Naphtho[2,3-e]pyrene	-	-	-	-	-	-	-	-
7440-02-0	Nickel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NICKEL-COM	Nickel Compounds	-	-	-	-	-	-	-	-
1313-99-1	Nickel oxide	-	-	-	-	-	-	-	-
0-02-5	Nickel refinery dust from the	-	-	-	-	-	-	-	-
12035-72-2	Nickel sulfide (NI3S2)	-	-	-	-	-	-	-	-
7697-37-2	Nitric acid	-	-	-	-	-	-	-	-
139-13-9	Nitrilotriacetic acid	-	-	-	-	-	-	-	-
18662-53-8	Nitrilotriacetic acid, trisodiu	-	-	-	-	-	-	-	-
602-87-9	Nitroacenaphthene, 5-	-	-	-	-	-	-	-	-
88-74-4	Nitroaniline, 2-	-	-	-	-	-	-	-	-
100-01-6	Nitroaniline, 4-	-	-	-	-	-	-	-	-
98-95-3	Nitrobenzene	-	-	-	-	-	-	-	-
7496-02-8	Nitrochrysene, 6-	-	-	-	-	-	-	-	-
607-57-8	Nitrofluorene, 2-	-	-	-	-	-	-	-	-
10102-44-0	Nitrogen dioxide (NO2)	12.30	4.01	0.94	0.58	32.36	7.56	1.87	0.65
75-52-5	Nitromethane	-	-	-	-	-	-	-	-
79-46-9	Nitropropane, 2-	-	-	-	-	-	-	-	-
5522-43-0	Nitropyrene, 1-	-	-	-	-	-	-	-	-
57835-92-4	Nitropyrene, 4-	-	-	-	-	-	-	-	-
156-10-5	Nitrosodiphenylamine, p-	-	-	-	-	-	-	-	-
3268-87-9	Octachlorodibenzo-p-dioxin,	-	-	-	-	-	-	-	-
39001-02-0	Octachlorodibenzofuran, 1,2	-	-	-	-	-	-	-	-
10028-15-6	Ozone	-	-	-	-	-	-	-	-
74472-37-0	PCB 114 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
31508-00-6	PCB 118 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
65510-44-3	PCB 123 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
57465-28-8	PCB 126 (3,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
38380-0804	PCB 156 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Hep	-	-	-	-	-	-	-	-
32598-13-3	PCB 77 (3,3,4,4-Tetrachloro	-	-	-	-	-	-	-	-
70362-50-4	PCB 81 (3,4,4,5 Tetrachloro	-	-	-	-	-	-	-	-
32598-14-4	PCB105 (2,3,3,4,4 Pentachl	-	-	-	-	-	-	-	-
40321-76-4	Pentachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-1	Pentachlorodibenzodioxins,	-	-	-	-	-	-	-	-
57117-41-6	Pentachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
57117-31-4	Pentachlorodibenzofuran, 2	-	-	-	-	-	-	-	-
00-09-0	Pentachlorodibenzofurans,	-	-	-	-	-	-	-	-
87-86-5	Pentachlorophenol	-	-	-	-	-	-	-	-
109-66-0	Pentane, n-	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
85-01-8	Phenanthrene	-	-	-	-	-	-	-	-
108-95-2	Phenol	-	-	-	-	-	-	-	-
75-44-5	Phosgene	-	-	-	-	-	-	-	-
7803-51-2	Phosphine	-	-	-	-	-	-	-	-
7664-38-2	Phosphoric acid	-	-	-	-	-	-	-	-
85-44-9	Phthalic anhydride	-	-	-	-	-	-	-	-
59536-65-1	Polybrominated Biphenyls	-	-	-	-	-	-	-	-
1336-36-3	Polychlorinated biphenyls (A	-	-	-	-	-	-	-	-
00-08-0	Polychlorinated Dibenzo-P-	-	-	-	-	-	-	-	-
00-05-0	Polychlorinated Dibenzodio	-	-	-	-	-	-	-	-
00-05-1	Polychlorinated Dibenzofura	-	-	-	-	-	-	-	-
130498-29-2	Polycyclic Aromatic Hydroca	-	-	-	-	-	-	-	-
00-01-7	Polycyclic Organic Matter (P	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9016-87-9	Polymeric diphenylmethane	-	-	-	-	-	-	-	-
7758-01-2	Potassium bromate	-	-	-	-	-	-	-	-
1120-71-4	Propane sultone, 1,3-	-	-	-	-	-	-	-	-
57-57-8	Propiolactone, beta-	-	-	-	-	-	-	-	-
123-38-6	Propionaldehyde	-	-	-	-	-	-	-	-
115-07-1	Propylene	-	-	-	-	-	-	-	-
78-87-5	Propylene dichloride (1,2-Di	-	-	-	-	-	-	-	-
107-98-2	Propylene Glycol Monometh	-	-	-	-	-	-	-	-
75-56-9	Propylene oxide	-	-	-	-	-	-	-	-
930-55-2	Pyrrolidine, 1-Nitroso-	-	-	-	-	-	-	-	-
7782-49-2	Selenium	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0-01-9	Selenium Compounds	-	-	-	-	-	-	-	-
7631-86-9	Silica (crystalline, respirable	-	-	-	-	-	-	-	-
1310-73-2	Sodium hydroxide	-	-	-	-	-	-	-	-
10588-01-9	Sodium Dichromate	-	-	-	-	-	-	-	-
7789-06-2	Strontium chromate	-	-	-	-	-	-	-	-
100-42-5	Styrene	-	-	-	-	-	-	-	-
96-09-3	Styrene oxide	-	-	-	-	-	-	-	-
14808-79-8	Sulfates	-	-	-	-	-	-	-	-
126-33-0	Sulfolane	-	-	-	-	-	-	-	-
7446-09-5	Sulfur dioxide	0.07	0.02	0.01	0.00	32.36	7.56	1.87	0.65
7664-93-9	Sulfuric acid (aerosol forms	-	-	-	-	-	-	-	-
8014-95-7	Sulfuric Acid mixture w. sulf	-	-	-	-	-	-	-	-
00-09-1	TCDD Eqivalents, 2,3,7,8-	-	-	-	-	-	-	-	-
540-88-5	Tert-Butyl Acetate	-	-	-	-	-	-	-	-
1746-01-6	Tetrachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-8	Tetrachlorodibenzodioxins,	-	-	-	-	-	-	-	-
51207-31-9	Tetrachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-

00-08-6	Tetrachlorodibenzofurans, A	-	-	-	-	-	-	-	-
630-20-6	Tetrachloroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
79-34-5	Tetrachloroethane, 1,1,2,2-	-	-	-	-	-	-	-	-
127-18-4	Tetrachloroethylene (Perchl	-	-	-	-	-	-	-	-
811-97-2	Tetrafluoroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
109-99-9	Tetrahydrofuran	-	-	-	-	-	-	-	-
62-55-5	Thioacetamide	-	-	-	-	-	-	-	-
62-56-6	Thiourea	-	-	-	-	-	-	-	-
108-88-3	Toluene	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
584-84-9	Toluene-2,4-diisocyanate	-	-	-	-	-	-	-	-
91-08-7	Toluene-2,6-diisocyanate	-	-	-	-	-	-	-	-
95-80-7	Toluene diamine, 2,4-	-	-	-	-	-	-	-	-
26471-62-5	Toluenediisocyanate (mixed	-	-	-	-	-	-	-	-
95-53-4	Toluidine, o- (Methylaniline,	-	-	-	-	-	-	-	-
8001-35-2	Toxaphene (chlorinated ca	-	-	-	-	-	-	-	-
10061-02-6	trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-
120-82-1	Trichlorobenzene, 1,2,4-	-	-	-	-	-	-	-	-
79-00-5	Trichloroethane, 1,1,2-	-	-	-	-	-	-	-	-
79-01-6	Trichloroethylene (TCE)	-	-	-	-	-	-	-	-
75-69-4	Trichlorofluoromethane (CF	-	-	-	-	-	-	-	-
88-06-2	Trichlorophenol, 2,4,6-	-	-	-	-	-	-	-	-
96-18-4	Trichloropropane, 1,2,3-	-	-	-	-	-	-	-	-
96-19-5	Trichloropropene, 1,2,3-	-	-	-	-	-	-	-	-
76-13-1	Trichlorotrifluoroethane, 1,1	-	-	-	-	-	-	-	-
121-44-8	Triethylamine	-	-	-	-	-	-	-	-
420-46-2	Trifluoroethane, 1,1,1-	-	-	-	-	-	-	-	-
526-73-8	Trimethylbenzene, 1,2,3-	-	-	-	-	-	-	-	-
95-63-6	Trimethylbenzene, 1,2,4-	-	-	-	-	-	-	-	-
108-67-8	Trimethylbenzene, 1,3,5-	-	-	-	-	-	-	-	-
URANIUM-SO	Uranium (Soluble Salts)	-	-	-	-	-	-	-	-
7440-61-1	Uranium, Insoluble Compou	-	-	-	-	-	-	-	-
7440-62-2	Vanadium and Compounds	-	-	-	-	-	-	-	-
1314-62-1	Vanadium Pentoxide, (V2O	-	-	-	-	-	-	-	-
108-05-4	Vinyl acetate	-	-	-	-	-	-	-	-
593-60-2	Vinyl bromide	-	-	-	-	-	-	-	-
75-01-4	Vinyl chloride	-	-	-	-	-	-	-	-
1330-20-7	Xylenes	-	-	-	-	-	-	-	-
108-38-3	Xylenes, m-	-	-	-	-	-	-	-	-
95-47-6	Xylenes, o-	-	-	-	-	-	-	-	-
106-42-3	Xylenes, p-	-	-	-	-	-	-	-	-
13530-65-9	Zinc chromate	-	-	-	-	-	-	-	-

RASS version: 2020-12

No inputs needed on this page

Air Concentrations in ug/m3

		Stack #30				Stack #31			
CAS# or MPCA#	**Chemical Name**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**
202-94-8	11H-Benz[b,c]aceanthrylene	-	-	-	-	-	-	-	-
202-98-2	4H-Cyclopenta[d,e,f]chrysen	-	-	-	-	-	-	-	-
75-07-0	Acetaldehyde	-	-	-	-	-	-	-	-
60-35-5	Acetamide	-	-	-	-	-	-	-	-
67-64-1	Acetone	-	-	-	-	-	-	-	-
75-86-5	Acetone Cyanohydrin	-	-	-	-	-	-	-	-
75-05-8	Acetonitrile	-	-	-	-	-	-	-	-
53-96-3	Acetylaminofluorene, 2-	-	-	-	-	-	-	-	-
107-02-8	Acrolein	-	-	-	-	-	-	-	-
79-06-1	Acrylamide	-	-	-	-	-	-	-	-
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-	-	-	-	-	-	-	-	-
79-10-7	Acrylic acid	-	-	-	-	-	-	-	-
107-13-1	Acrylonitrile	-	-	-	-	-	-	-	-
111-69-3	Adiponitrile	-	-	-	-	-	-	-	-
ALDEHYDES	Aldehydes	-	-	-	-	-	-	-	-
309-00-2	Aldrin	-	-	-	-	-	-	-	-
ALIPHATIC-M	Aliphatic Hydrocarbon Strea	-	-	-	-	-	-	-	-
107-05-1	Allyl chloride	-	-	-	-	-	-	-	-
7429-90-5	Aluminum	-	-	-	-	-	-	-	-
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3	-	-	-	-	-	-	-	-
6109-97-3	Amino-9-ethylcarbazolehydr	-	-	-	-	-	-	-	-
117-79-3	Aminoanthraquinone, 2-	-	-	-	-	-	-	-	-
7664-41-7	Ammonia	-	-	-	-	-	-	-	-
62-53-3	Aniline	-	-	-	-	-	-	-	-
191-26-4	Anthanthrene	-	-	-	-	-	-	-	-
7440-36-0	Antimony	-	-	-	-	-	-	-	-
ANTIMONY-C	Antimony Compounds	-	-	-	-	-	-	-	-
1309-64-4	Antimony trioxide	-	-	-	-	-	-	-	-
140-57-8	Aramite	-	-	-	-	-	-	-	-
7440-38-2	Arsenic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ARSENIC-CO	Arsenic Compounds	-	-	-	-	-	-	-	-
1327-53-3	Arsenic Trioxide	-	-	-	-	-	-	-	-
7784-42-1	Arsine	-	-	-	-	-	-	-	-
1332-21-4	Asbestos (units in fibers)	-	-	-	-	-	-	-	-
1332-21-4-LA	Asbestos, Libby Amphibole	-	-	-	-	-	-	-	-
123-77-3	Azodicarbonamide	-	-	-	-	-	-	-	-
10294-40-3	Barium Chromate	-	-	-	-	-	-	-	-
199-54-2	Benz[e]aceanthrylene	-	-	-	-	-	-	-	-
202-33-5	Benz[j]aceanthrylene	-	-	-	-	-	-	-	-
211-91-6	Benz[l]aceanthrylene	-	-	-	-	-	-	-	-
71-43-2	Benzene	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
92-87-5	Benzidine	-	-	-	-	-	-	-	-
205-82-3	Benzo(j)fluoranthene	-	-	-	-	-	-	-	-
207-08-9	Benzo(k)fluoranthene	-	-	-	-	-	-	-	-
56-55-3	Benzo[a]anthracene	-	-	-	-	-	-	-	-
50-32-8	Benzo[a]pyrene	-	-	-	-	-	-	-	-
205-99-2	Benzo[b]fluoranthene	-	-	-	-	-	-	-	-
205-12-9	Benzo[c]fluorene	-	-	-	-	-	-	-	-
191-24-2	Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-
65-85-0	Benzoic Acid	-	-	-	-	-	-	-	-
100-44-7	Benzyl chloride	-	-	-	-	-	-	-	-
7440-41-7	Beryllium	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BERYLLIUM-	Beryllium Compounds	-	-	-	-	-	-	-	-
13510-49-1	Beryllium sulfate	-	-	-	-	-	-	-	-
111-44-4	Bis(2-chloroethyl)ether	-	-	-	-	-	-	-	-
117-81-7	Bis(2-ethylhexyl)phthalate (	-	-	-	-	-	-	-	-
542-88-1	Bis(chloromethyl)ether	-	-	-	-	-	-	-	-
7440-42-8	Boron And Borates Only	-	-	-	-	-	-	-	-
10294-34-5	Boron Trichloride	-	-	-	-	-	-	-	-
7637-07-2	Boron Trifluoride	-	-	-	-	-	-	-	-
108-86-1	Bromobenzene	-	-	-	-	-	-	-	-
74-97-5	Bromochloromethane	-	-	-	-	-	-	-	-
75-27-4	Bromodichloromethane	-	-	-	-	-	-	-	-
75-25-2	Bromoform	-	-	-	-	-	-	-	-
74-83-9	Bromomethane	-	-	-	-	-	-	-	-
106-94-5	Bromopropane, 1-	-	-	-	-	-	-	-	-
106-99-0	Butadiene, 1,3-	-	-	-	-	-	-	-	-
78-92-2	Butyl alcohol, sec-	-	-	-	-	-	-	-	-
111-76-2	Butyl Cellosolve (ethylene g	-	-	-	-	-	-	-	-
25013-16-5	Butylated hydroxyanisole	-	-	-	-	-	-	-	-
3068-88-0	Butyrolactone, beta-	-	-	-	-	-	-	-	-
7440-43-9	Cadmium	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CADMIUM-CO	Cadmium Compounds	-	-	-	-	-	-	-	-
13765-19-0	Calcium Chromate	-	-	-	-	-	-	-	-
105-60-2	Caprolactum	-	-	-	-	-	-	-	-
75-15-0	Carbon disulfide	-	-	-	-	-	-	-	-
630-08-0	Carbon Monoxide	26.94	5.10	1.12	0.59	18.05	5.61	1.47	0.77
56-23-5	Carbon tetrachloride	-	-	-	-	-	-	-	-
463-58-1	Carbonyl sulfide	-	-	-	-	-	-	-	-
111-15-9	Cellosolve Acetate (ethylen	-	-	-	-	-	-	-	-
1306-38-3	Cerium Oxide and Cerium C	-	-	-	-	-	-	-	-
12789-03-6	Chlordane or (57-74-9)	-	-	-	-	-	-	-	-
115-28-6	Chlorendic acid	-	-	-	-	-	-	-	-
108171-26-2	Chlorinated Paraffins (C12,	-	-	-	-	-	-	-	-
7782-50-5	Chlorine	-	-	-	-	-	-	-	-

10049-04-4	Chlorine Oxide (CLO2)	-	-	-	-	-	-	-	-
75-68-3	Chloro-1,1-difluoroethane, 1	-	-	-	-	-	-	-	-
563-47-3	Chloro-2-methylpropene, 3-	-	-	-	-	-	-	-	-
95-83-0	Chloro-o-phenylenediamine	-	-	-	-	-	-	-	-
95-69-2	Chloro-o-toluidine, p-	-	-	-	-	-	-	-	-
532-27-4	Chloroacetophenone, 2-	-	-	-	-	-	-	-	-
108-90-7	Chlorobenzene	-	-	-	-	-	-	-	-
98-56-6	Chlorobenzotrifluoride, 4-	-	-	-	-	-	-	-	-
75-45-6	Chlorodifluoromethane (HC	-	-	-	-	-	-	-	-
67-66-3	Chloroform	-	-	-	-	-	-	-	-
107-30-2	Chloromethyl Methyl Ether	-	-	-	-	-	-	-	-
88-73-3	Chloronitrobenzene, o-	-	-	-	-	-	-	-	-
100-00-5	Chloronitrobenzene, p-	-	-	-	-	-	-	-	-
76-06-2	Chloropicrin	-	-	-	-	-	-	-	-
126-99-8	Chloroprene	-	-	-	-	-	-	-	-
1333-82-0	Chromic acid mists and diss	-	-	-	-	-	-	-	-
7440-47-3	Chromium	-	-	-	-	-	-	-	-
18540-29-9	Chromium (Hexavalent)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18540-29-9-p	Chromium (Hexavalent) - P	-	-	-	-	-	-	-	-
CHROM-COM	Chromium Compounds	-	-	-	-	-	-	-	-
16065-83-1	Chromium(III) Compounds	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
218-01-9	Chrysene (Benzo(a)phenan	-	-	-	-	-	-	-	-
87-29-6	Cinnamyl anthranilate	-	-	-	-	-	-	-	-
10061-01-5	cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-
8007-45-2	Coal Tar	-	-	-	-	-	-	-	-
7440-48-4	Cobalt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0-00-7	Coke Oven Emissions	-	-	-	-	-	-	-	-
7440-50-8	Copper	-	-	-	-	-	-	-	-
COPPER-CO	Copper Compounds	-	-	-	-	-	-	-	-
120-71-8	Cresidine, p-	-	-	-	-	-	-	-	-
108-39-4	Cresol, m-	-	-	-	-	-	-	-	-
95-48-7	Cresol, o-	-	-	-	-	-	-	-	-
106-44-5	Cresol, p-	-	-	-	-	-	-	-	-
1319-77-3	Cresols/Cresylic acid (isome	-	-	-	-	-	-	-	-
98-82-8	Cumene	-	-	-	-	-	-	-	-
135-20-6	Cupferron	-	-	-	-	-	-	-	-
57-12-5	Cyanide (Cyanide ion, Inorg	-	-	-	-	-	-	-	-
CYANIDE-CO	Cyanide Compounds	-	-	-	-	-	-	-	-
110-82-7	Cyclohexane	-	-	-	-	-	-	-	-
108-94-1	Cyclohexanone	-	-	-	-	-	-	-	-
27208-37-3	Cyclopenta[c,d]pyrene	-	-	-	-	-	-	-	-
50-29-3	DDT	-	-	-	-	-	-	-	-
615-05-4	Diaminoanisole, 2,4-	-	-	-	-	-	-	-	-
101-80-4	Diaminodiphenyl ether, 4,4-	-	-	-	-	-	-	-	-
103-33-3	Diazene, Diphenyl	-	-	-	-	-	-	-	-
226-36-8	Dibenz(a,h)acridine	-	-	-	-	-	-	-	-
224-42-0	Dibenz(a,j)acridine	-	-	-	-	-	-	-	-
53-70-3	Dibenz[a,h]anthracene	-	-	-	-	-	-	-	-
192-65-4	Dibenzo(a,e)pyrene	-	-	-	-	-	-	-	-
189-64-0	Dibenzo(a,h)pyrene	-	-	-	-	-	-	-	-
191-30-0	Dibenzo(a,l)pyrene	-	-	-	-	-	-	-	-
194-59-2	Dibenzo(c,g)carbazole, 7H-	-	-	-	-	-	-	-	-
5385-75-1	Dibenzo[a,e]fluoranthene	-	-	-	-	-	-	-	-
189-55-9	Dibenzo[a,i]pyrene	-	-	-	-	-	-	-	-
96-12-8	Dibromo-3-chloropropane, 1	-	-	-	-	-	-	-	-
764-41-0	Dichloro-2-butene, 1,4-	-	-	-	-	-	-	-	-
1476-11-5	Dichloro-2-butene, cis-1,4-	-	-	-	-	-	-	-	-
106-46-7	Dichlorobenzene(p), 1,4-	-	-	-	-	-	-	-	-
25321-22-6	Dichlorobenzenes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
91-94-1	Dichlorobenzidene, 3,3-	-	-	-	-	-	-	-	-
75-71-8	Dichlorodifluoromethane (C	-	-	-	-	-	-	-	-
75-35-4	Dichloroethylene (1,1-) (Vin	-	-	-	-	-	-	-	-
156-60-5	Dichloroethylene, trans-1,2-	0.02	0.00	0.00	0.00	0.86	0.27	0.07	0.04
542-75-6	Dichloropropene, 1,3-	-	-	-	-	-	-	-	-
78-88-6	Dichloropropene, 2,3-	-	-	-	-	-	-	-	-
62-73-7	Dichlorvos	-	-	-	-	-	-	-	-
77-73-6	Dicyclopentadiene	-	-	-	-	-	-	-	-
60-57-1	Dieldrin	-	-	-	-	-	-	-	-
0-02-4	Diesel exhaust particulate	-	-	-	-	-	-	-	-
111-42-2	Diethanolamine	-	-	-	-	-	-	-	-
112-34-5	Diethylene Glycol Monobuty	-	-	-	-	-	-	-	-
111-90-0	Diethylene Glycol Monoethy	-	-	-	-	-	-	-	-
75-37-6	Difluoroethane, 1,1-	-	-	-	-	-	-	-	-
108-20-3	Diisopropyl Ether	-	-	-	-	-	-	-	-
60-11-7	Dimethyl aminoazobenzene	-	-	-	-	-	-	-	-
68-12-2	Dimethyl formamide	-	-	-	-	-	-	-	-
108-01-0	Dimethylamino ethanol, 2-	-	-	-	-	-	-	-	-
57-97-6	Dimethylbenz[a]anthracene,	-	-	-	-	-	-	-	-
57-14-7	Dimethylhydrazine, 1,1-	-	-	-	-	-	-	-	-
42397-64-8	Dinitropyrene, 1,6- (BaP)	-	-	-	-	-	-	-	-
42397-65-9	Dinitropyrene, 1,8- (BaP)	-	-	-	-	-	-	-	-
121-14-2	Dinitrotoluene, 2,4-	-	-	-	-	-	-	-	-
123-91-1	Dioxane, 1,4- (1,4-Diethylen	-	-	-	-	-	-	-	-
122-66-7	Diphenylhydrazine, 1,2-	-	-	-	-	-	-	-	-
106-89-8	Epichlorohydrin (l-Chloro-2,	-	-	-	-	-	-	-	-
106-88-7	Epoxybutane, 1,2-	-	-	-	-	-	-	-	-
110-80-5	Ethoxyethanol, 2- (ethylene	-	-	-	-	-	-	-	-
141-78-6	Ethyl acetate	-	-	-	-	-	-	-	-
140-88-5	Ethyl Acrylate	-	-	-	-	-	-	-	-
100-41-4	Ethyl benzene	-	-	-	-	-	-	-	-
51-79-6	Ethyl carbamate (Urethane)	-	-	-	-	-	-	-	-

75-00-3	Ethyl chloride (Chloroethane	-	-	-	-	-	-	-	-
97-63-2	Ethyl Methacrylate	-	-	-	-	-	-	-	-
106-93-4	Ethylene dibromide (Dibrom	-	-	-	-	-	-	-	-
107-06-2	Ethylene dichloride (1,2-Dic	-	-	-	-	-	-	-	-
107-21-1	Ethylene glycol	-	-	-	-	-	-	-	-
75-21-8	Ethylene oxide	-	-	-	-	-	-	-	-
96-45-7	Ethylene thiourea	-	-	-	-	-	-	-	-
75-34-3	Ethylidene dichloride (1,1-D	-	-	-	-	-	-	-	-
206-44-0	Fluoranthene	-	-	-	-	-	-	-	-
FLUORIDES	Fluorides (except hydrogen	-	-	-	-	-	-	-	-
50-00-0	Formaldehyde	0.02	0.00	0.00	0.00	0.02	0.01	0.00	0.00
64-18-6	Formic Acid	-	-	-	-	-	-	-	-
111-30-8	Glutaraldehyde	-	-	-	-	-	-	-	-
0-01-2	Glycol ethers	-	-	-	-	-	-	-	-
76-44-8	Heptachlor	-	-	-	-	-	-	-	-
1024-57-3	Heptachlor epoxide	-	-	-	-	-	-	-	-
35822-46-9	Heptachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-5	Heptachlorodibenzodioxin,	-	-	-	-	-	-	-	-
67562-39-4	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
55673-89-7	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
00-08-4	Heptachlorodibenzofuran, A	-	-	-	-	-	-	-	-
142-82-5	Heptane, N	-	-	-	-	-	-	-	-
118-74-1	Hexachlorobenzene	-	-	-	-	-	-	-	-
87-68-3	Hexachlorobutadiene	-	-	-	-	-	-	-	-
608-73-1	Hexachlorocyclohexane (tec	-	-	-	-	-	-	-	-
319-84-6	Hexachlorocyclohexane, alp	-	-	-	-	-	-	-	-
319-85-7	Hexachlorocyclohexane, be	-	-	-	-	-	-	-	-
77-47-4	Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-
39227-28-6	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
57653-85-7	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
19408-74-3	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-3	Hexachlorodibenzodioxins,	-	-	-	-	-	-	-	-
70648-26-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
57117-44-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
72918-21-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
60851-34-5	Hexachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-
00-08-2	Hexachlorodibenzofurans, A	-	-	-	-	-	-	-	-
67-72-1	Hexachloroethane	-	-	-	-	-	-	-	-
822-06-0	Hexamethylene-1,6-diisocya	-	-	-	-	-	-	-	-
110-54-3	Hexane	0.58	0.11	0.02	0.01	0.39	0.12	0.03	0.02
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl	-	-	-	-	-	-	-	-
591-78-6	Hexanone-2	-	-	-	-	-	-	-	-
302-01-2	Hydrazine	-	-	-	-	-	-	-	-
10034-93-2	Hydrazine sulfate	-	-	-	-	-	-	-	-
7647-01-0	Hydrochloric acid (hydrogen	-	-	-	-	-	-	-	-
74-90-8	Hydrogen cyanide	-	-	-	-	-	-	-	-
7664-39-3	Hydrogen fluoride (Hydroflu	-	-	-	-	-	-	-	-
7783-07-5	Hydrogen selenide	-	-	-	-	-	-	-	-
7783-06-4	Hydrogen sulfide	-	-	-	-	-	-	-	-
193-39-5	Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-
5888-33-5	Isobornyl acrylate	-	-	-	-	-	-	-	-
78-59-1	Isophorone	-	-	-	-	-	-	-	-
67-63-0	Isopropyl alcohol	-	-	-	-	-	-	-	-
7439-92-1	Lead	-	-	-	-	-	-	-	-
7758-97-6	Lead Chromate	-	-	-	-	-	-	-	-
LEAD-COMP	Lead Compounds	-	-	-	-	-	-	-	-
58-89-9	Lindane (all isomers)	-	-	-	-	-	-	-	-
108-31-6	Maleic anhydride	-	-	-	-	-	-	-	-
7439-96-5	Manganese	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MANGANESE	Manganese Compounds	-	-	-	-	-	-	-	-
7439-97-6	Mercury (elemental)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MERCURY-C	Mercury Compounds	-	-	-	-	-	-	-	-
126-98-7	Methacrylonitrile	-	-	-	-	-	-	-	-
67-56-1	Methanol	-	-	-	-	-	-	-	-
109-86-4	Methoxyethanol, 2- (ethylen	-	-	-	-	-	-	-	-
96-33-3	Methyl acrylate	-	-	-	-	-	-	-	-
110-49-6	Methyl Cellosolve Acetate	-	-	-	-	-	-	-	-
74-87-3	Methyl chloride (Chlorometh	-	-	-	-	-	-	-	-
71-55-6	Methyl chloroform (1,1,1-Tri	-	-	-	-	-	-	-	-
78-93-3	Methyl ethyl ketone (2-Buta	-	-	-	-	-	-	-	-
60-34-4	Methyl Hydrazine	-	-	-	-	-	-	-	-
108-10-1	Methyl isobutyl ketone (Hex	-	-	-	-	-	-	-	-
624-83-9	Methyl isocyanate	-	-	-	-	-	-	-	-
80-62-6	Methyl methacrylate	-	-	-	-	-	-	-	-
1634-04-4	Methyl tert butyl ether	-	-	-	-	-	-	-	-
56-49-5	Methylcholanthrene, 3-	-	-	-	-	-	-	-	-
3697-24-3	Methylchrysene, 5-	-	-	-	-	-	-	-	-
101-14-4	Methylene bis(2-chloroanilin	-	-	-	-	-	-	-	-
74-95-3	Methylene Bromide	-	-	-	-	-	-	-	-
75-09-2	Methylene chloride (Dichlor	-	-	-	-	-	-	-	-
101-68-8	Methylene diphenyl diisocya	-	-	-	-	-	-	-	-
101-77-9	Methylenedianiline, 4,4-	-	-	-	-	-	-	-	-
90-94-8	Michler's ketone	-	-	-	-	-	-	-	-
10595-95-6	N- Nitrosomethylethylamine	-	-	-	-	-	-	-	-
924-16-3	N-Nitrosodi-n-butylamine	-	-	-	-	-	-	-	-
621-64-7	N-Nitrosodi-n-propylamine	-	-	-	-	-	-	-	-
55-18-5	N-Nitrosodiethylamine	-	-	-	-	-	-	-	-
62-75-9	N-Nitrosodimethylamine	-	-	-	-	-	-	-	-
86-30-6	N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-
59-89-2	N-Nitrosomorpholine	-	-	-	-	-	-	-	-
100-75-4	N-Nitrosopiperidine	-	-	-	-	-	-	-	-

111-84-2	N-Nonane	-	-	-	-	-	-	-	-
64724-95-6	Naphtha, High Flash Aroma	-	-	-	-	-	-	-	-
91-20-3	Naphthalene	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
193-09-9	Naphtho[2,3-e]pyrene	-	-	-	-	-	-	-	-
7440-02-0	Nickel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NICKEL-COM	Nickel Compounds	-	-	-	-	-	-	-	-
1313-99-1	Nickel oxide	-	-	-	-	-	-	-	-
0-02-5	Nickel refinery dust from the	-	-	-	-	-	-	-	-
12035-72-2	Nickel sulfide (NI3S2)	-	-	-	-	-	-	-	-
7697-37-2	Nitric acid	-	-	-	-	-	-	-	-
139-13-9	Nitrilotriacetic acid	-	-	-	-	-	-	-	-
18662-53-8	Nitrilotriacetic acid, trisodiu	-	-	-	-	-	-	-	-
602-87-9	Nitroacenaphthene, 5-	-	-	-	-	-	-	-	-
88-74-4	Nitroaniline, 2-	-	-	-	-	-	-	-	-
100-01-6	Nitroaniline, 4-	-	-	-	-	-	-	-	-
98-95-3	Nitrobenzene	-	-	-	-	-	-	-	-
7496-02-8	Nitrochrysene, 6-	-	-	-	-	-	-	-	-
607-57-8	Nitrofluorene, 2-	-	-	-	-	-	-	-	-
10102-44-0	Nitrogen dioxide (NO2)	32.07	6.07	1.33	0.71	21.48	6.68	1.75	0.91
75-52-5	Nitromethane	-	-	-	-	-	-	-	-
79-46-9	Nitropropane, 2-	-	-	-	-	-	-	-	-
5522-43-0	Nitropyrene, 1-	-	-	-	-	-	-	-	-
57835-92-4	Nitropyrene, 4-	-	-	-	-	-	-	-	-
156-10-5	Nitrosodiphenylamine, p-	-	-	-	-	-	-	-	-
3268-87-9	Octachlorodibenzo-p-dioxin,	-	-	-	-	-	-	-	-
39001-02-0	Octachlorodibenzofuran, 1,2	-	-	-	-	-	-	-	-
10028-15-6	Ozone	-	-	-	-	-	-	-	-
74472-37-0	PCB 114 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
31508-00-6	PCB 118 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
65510-44-3	PCB 123 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
57465-28-8	PCB 126 (3,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
38380-0804	PCB 156 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Hep	-	-	-	-	-	-	-	-
32598-13-3	PCB 77 (3,3,4,4-Tetrachloro	-	-	-	-	-	-	-	-
70362-50-4	PCB 81 (3,4,4,5 Tetrachloro	-	-	-	-	-	-	-	-
32598-14-4	PCB105 (2,3,3,4,4 Pentachl	-	-	-	-	-	-	-	-
40321-76-4	Pentachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-1	Pentachlorodibenzodioxins,	-	-	-	-	-	-	-	-
57117-41-6	Pentachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
57117-31-4	Pentachlorodibenzofuran, 2	-	-	-	-	-	-	-	-
00-09-0	Pentachlorodibenzofurans,	-	-	-	-	-	-	-	-
87-86-5	Pentachlorophenol	-	-	-	-	-	-	-	-
109-66-0	Pentane, n-	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
85-01-8	Phenanthrene	-	-	-	-	-	-	-	-
108-95-2	Phenol	-	-	-	-	-	-	-	-
75-44-5	Phosgene	-	-	-	-	-	-	-	-
7803-51-2	Phosphine	-	-	-	-	-	-	-	-
7664-38-2	Phosphoric acid	-	-	-	-	-	-	-	-
85-44-9	Phthalic anhydride	-	-	-	-	-	-	-	-
59536-65-1	Polybrominated Biphenyls	-	-	-	-	-	-	-	-
1336-36-3	Polychlorinated biphenyls (A	-	-	-	-	-	-	-	-
00-08-0	Polychlorinated Dibenzo-P-	-	-	-	-	-	-	-	-
00-05-0	Polychlorinated Dibenzodio	-	-	-	-	-	-	-	-
00-05-1	Polychlorinated Dibenzofura	-	-	-	-	-	-	-	-
130498-29-2	Polycyclic Aromatic Hydroca	-	-	-	-	-	-	-	-
00-01-7	Polycyclic Organic Matter (P	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9016-87-9	Polymeric diphenylmethane	-	-	-	-	-	-	-	-
7758-01-2	Potassium bromate	-	-	-	-	-	-	-	-
1120-71-4	Propane sultone, 1,3-	-	-	-	-	-	-	-	-
57-57-8	Propiolactone, beta-	-	-	-	-	-	-	-	-
123-38-6	Propionaldehyde	-	-	-	-	-	-	-	-
115-07-1	Propylene	-	-	-	-	-	-	-	-
78-87-5	Propylene dichloride (1,2-Di	-	-	-	-	-	-	-	-
107-98-2	Propylene Glycol Monometh	-	-	-	-	-	-	-	-
75-56-9	Propylene oxide	-	-	-	-	-	-	-	-
930-55-2	Pyrrolidine, 1-Nitroso-	-	-	-	-	-	-	-	-
7782-49-2	Selenium	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0-01-9	Selenium Compounds	-	-	-	-	-	-	-	-
7631-86-9	Silica (crystalline, respirable	-	-	-	-	-	-	-	-
1310-73-2	Sodium hydroxide	-	-	-	-	-	-	-	-
10588-01-9	Sodium Dichromate	-	-	-	-	-	-	-	-
7789-06-2	Strontium chromate	-	-	-	-	-	-	-	-
100-42-5	Styrene	-	-	-	-	-	-	-	-
96-09-3	Styrene oxide	-	-	-	-	-	-	-	-
14808-79-8	Sulfates	-	-	-	-	-	-	-	-
126-33-0	Sulfolane	-	-	-	-	-	-	-	-
7446-09-5	Sulfur dioxide	32.07	6.07	1.33	0.71	21.48	6.68	1.75	0.91
7664-93-9	Sulfuric acid (aerosol forms	-	-	-	-	-	-	-	-
8014-95-7	Sulfuric Acid mixture w. sulf	-	-	-	-	-	-	-	-
00-09-1	TCDD Eqivalents, 2,3,7,8-	-	-	-	-	-	-	-	-
540-88-5	Tert-Butyl Acetate	-	-	-	-	-	-	-	-
1746-01-6	Tetrachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-8	Tetrachlorodibenzodioxins,	-	-	-	-	-	-	-	-
51207-31-9	Tetrachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-

00-08-6	Tetrachlorodibenzofurans, A	-	-	-	-	-	-	-	-
630-20-6	Tetrachloroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
79-34-5	Tetrachloroethane, 1,1,2,2-	-	-	-	-	-	-	-	-
127-18-4	Tetrachloroethylene (Perchl	-	-	-	-	-	-	-	-
811-97-2	Tetrafluoroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
109-99-9	Tetrahydrofuran	-	-	-	-	-	-	-	-
62-55-5	Thioacetamide	-	-	-	-	-	-	-	-
62-56-6	Thiourea	-	-	-	-	-	-	-	-
108-88-3	Toluene	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
584-84-9	Toluene-2,4-diisocyanate	-	-	-	-	-	-	-	-
91-08-7	Toluene-2,6-diisocyanate	-	-	-	-	-	-	-	-
95-80-7	Toluene diamine, 2,4-	-	-	-	-	-	-	-	-
26471-62-5	Toluenediisocyanate (mixed	-	-	-	-	-	-	-	-
95-53-4	Toluidine, o- (Methylaniline,	-	-	-	-	-	-	-	-
8001-35-2	Toxaphene (chlorinated ca	-	-	-	-	-	-	-	-
10061-02-6	trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-
120-82-1	Trichlorobenzene, 1,2,4-	-	-	-	-	-	-	-	-
79-00-5	Trichloroethane, 1,1,2-	-	-	-	-	-	-	-	-
79-01-6	Trichloroethylene (TCE)	-	-	-	-	-	-	-	-
75-69-4	Trichlorofluoromethane (CF	-	-	-	-	-	-	-	-
88-06-2	Trichlorophenol, 2,4,6-	-	-	-	-	-	-	-	-
96-18-4	Trichloropropane, 1,2,3-	-	-	-	-	-	-	-	-
96-19-5	Trichloropropene, 1,2,3-	-	-	-	-	-	-	-	-
76-13-1	Trichlorotrifluoroethane, 1,1	-	-	-	-	-	-	-	-
121-44-8	Triethylamine	-	-	-	-	-	-	-	-
420-46-2	Trifluoroethane, 1,1,1-	-	-	-	-	-	-	-	-
526-73-8	Trimethylbenzene, 1,2,3-	-	-	-	-	-	-	-	-
95-63-6	Trimethylbenzene, 1,2,4-	-	-	-	-	-	-	-	-
108-67-8	Trimethylbenzene, 1,3,5-	-	-	-	-	-	-	-	-
URANIUM-SO	Uranium (Soluble Salts)	-	-	-	-	-	-	-	-
7440-61-1	Uranium, Insoluble Compou	-	-	-	-	-	-	-	-
7440-62-2	Vanadium and Compounds	-	-	-	-	-	-	-	-
1314-62-1	Vanadium Pentoxide, (V2O	-	-	-	-	-	-	-	-
108-05-4	Vinyl acetate	-	-	-	-	-	-	-	-
593-60-2	Vinyl bromide	-	-	-	-	-	-	-	-
75-01-4	Vinyl chloride	-	-	-	-	-	-	-	-
1330-20-7	Xylenes	-	-	-	-	-	-	-	-
108-38-3	Xylenes, m-	-	-	-	-	-	-	-	-
95-47-6	Xylenes, o-	-	-	-	-	-	-	-	-
106-42-3	Xylenes, p-	-	-	-	-	-	-	-	-
13530-65-9	Zinc chromate	-	-	-	-	-	-	-	-

RASS version: 2020-12

No inputs needed on this page

Air Concentrations in ug/m3

		Stack #32				Stack #33			
CAS# or MPCA#	**Chemical Name**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**
202-94-8	11H-Benz[b,c]aceanthrylene	-	-	-	-	-	-	-	-
202-98-2	4H-Cyclopenta[d,e,f]chrysen	-	-	-	-	-	-	-	-
75-07-0	Acetaldehyde	-	-	-	-	-	-	-	-
60-35-5	Acetamide	-	-	-	-	-	-	-	-
67-64-1	Acetone	-	-	-	-	-	-	-	-
75-86-5	Acetone Cyanohydrin	-	-	-	-	-	-	-	-
75-05-8	Acetonitrile	-	-	-	-	-	-	-	-
53-96-3	Acetylaminofluorene, 2-	-	-	-	-	-	-	-	-
107-02-8	Acrolein	-	-	-	-	-	-	-	-
79-06-1	Acrylamide	-	-	-	-	-	-	-	-
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-	-	-	-	-	-	-	-	-
79-10-7	Acrylic acid	-	-	-	-	-	-	-	-
107-13-1	Acrylonitrile	-	-	-	-	-	-	-	-
111-69-3	Adiponitrile	-	-	-	-	-	-	-	-
ALDEHYDES	Aldehydes	-	-	-	-	-	-	-	-
309-00-2	Aldrin	-	-	-	-	-	-	-	-
ALIPHATIC-M	Aliphatic Hydrocarbon Strea	-	-	-	-	-	-	-	-
107-05-1	Allyl chloride	-	-	-	-	-	-	-	-
7429-90-5	Aluminum	-	-	-	-	-	-	-	-
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3	-	-	-	-	-	-	-	-
6109-97-3	Amino-9-ethylcarbazolehydr	-	-	-	-	-	-	-	-
117-79-3	Aminoanthraquinone, 2-	-	-	-	-	-	-	-	-
7664-41-7	Ammonia	-	-	-	-	-	-	-	-
62-53-3	Aniline	-	-	-	-	-	-	-	-
191-26-4	Anthanthrene	-	-	-	-	-	-	-	-
7440-36-0	Antimony	-	-	-	-	-	-	-	-
ANTIMONY-C	Antimony Compounds	-	-	-	-	-	-	-	-
1309-64-4	Antimony trioxide	-	-	-	-	-	-	-	-
140-57-8	Aramite	-	-	-	-	-	-	-	-
7440-38-2	Arsenic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ARSENIC-CO	Arsenic Compounds	-	-	-	-	-	-	-	-
1327-53-3	Arsenic Trioxide	-	-	-	-	-	-	-	-
7784-42-1	Arsine	-	-	-	-	-	-	-	-
1332-21-4	Asbestos (units in fibers)	-	-	-	-	-	-	-	-
1332-21-4-LA	Asbestos, Libby Amphibole	-	-	-	-	-	-	-	-
123-77-3	Azodicarbonamide	-	-	-	-	-	-	-	-
10294-40-3	Barium Chromate	-	-	-	-	-	-	-	-
199-54-2	Benz[e]aceanthrylene	-	-	-	-	-	-	-	-
202-33-5	Benz[j]aceanthrylene	-	-	-	-	-	-	-	-
211-91-6	Benz[l]aceanthrylene	-	-	-	-	-	-	-	-
71-43-2	Benzene	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
92-87-5	Benzidine	-	-	-	-	-	-	-	-
205-82-3	Benzo(j)fluoranthene	-	-	-	-	-	-	-	-
207-08-9	Benzo(k)fluoranthene	-	-	-	-	-	-	-	-
56-55-3	Benzo[a]anthracene	-	-	-	-	-	-	-	-
50-32-8	Benzo[a]pyrene	-	-	-	-	-	-	-	-
205-99-2	Benzo[b]fluoranthene	-	-	-	-	-	-	-	-
205-12-9	Benzo[c]fluorene	-	-	-	-	-	-	-	-
191-24-2	Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-
65-85-0	Benzoic Acid	-	-	-	-	-	-	-	-
100-44-7	Benzyl chloride	-	-	-	-	-	-	-	-
7440-41-7	Beryllium	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BERYLLIUM-	Beryllium Compounds	-	-	-	-	-	-	-	-
13510-49-1	Beryllium sulfate	-	-	-	-	-	-	-	-
111-44-4	Bis(2-chloroethyl)ether	-	-	-	-	-	-	-	-
117-81-7	Bis(2-ethylhexyl)phthalate (	-	-	-	-	-	-	-	-
542-88-1	Bis(chloromethyl)ether	-	-	-	-	-	-	-	-
7440-42-8	Boron And Borates Only	-	-	-	-	-	-	-	-
10294-34-5	Boron Trichloride	-	-	-	-	-	-	-	-
7637-07-2	Boron Trifluoride	-	-	-	-	-	-	-	-
108-86-1	Bromobenzene	-	-	-	-	-	-	-	-
74-97-5	Bromochloromethane	-	-	-	-	-	-	-	-
75-27-4	Bromodichloromethane	-	-	-	-	-	-	-	-
75-25-2	Bromoform	-	-	-	-	-	-	-	-
74-83-9	Bromomethane	-	-	-	-	-	-	-	-
106-94-5	Bromopropane, 1-	-	-	-	-	-	-	-	-
106-99-0	Butadiene, 1,3-	-	-	-	-	-	-	-	-
78-92-2	Butyl alcohol, sec-	-	-	-	-	-	-	-	-
111-76-2	Butyl Cellosolve (ethylene g	-	-	-	-	-	-	-	-
25013-16-5	Butylated hydroxyanisole	-	-	-	-	-	-	-	-
3068-88-0	Butyrolactone, beta-	-	-	-	-	-	-	-	-
7440-43-9	Cadmium	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CADMIUM-CO	Cadmium Compounds	-	-	-	-	-	-	-	-
13765-19-0	Calcium Chromate	-	-	-	-	-	-	-	-
105-60-2	Caprolactum	-	-	-	-	-	-	-	-
75-15-0	Carbon disulfide	-	-	-	-	-	-	-	-
630-08-0	Carbon Monoxide	11.77	4.13	0.83	0.49	9.54	2.91	0.79	0.48
56-23-5	Carbon tetrachloride	-	-	-	-	-	-	-	-
463-58-1	Carbonyl sulfide	-	-	-	-	-	-	-	-
111-15-9	Cellosolve Acetate (ethylen	-	-	-	-	-	-	-	-
1306-38-3	Cerium Oxide and Cerium C	-	-	-	-	-	-	-	-
12789-03-6	Chlordane or (57-74-9)	-	-	-	-	-	-	-	-
115-28-6	Chlorendic acid	-	-	-	-	-	-	-	-
108171-26-2	Chlorinated Paraffins (C12,	-	-	-	-	-	-	-	-
7782-50-5	Chlorine	-	-	-	-	-	-	-	-

10049-04-4	Chlorine Oxide (CLO2)	-	-	-	-	-	-	-	-
75-68-3	Chloro-1,1-difluoroethane, 1	-	-	-	-	-	-	-	-
563-47-3	Chloro-2-methylpropene, 3-	-	-	-	-	-	-	-	-
95-83-0	Chloro-o-phenylenediamine	-	-	-	-	-	-	-	-
95-69-2	Chloro-o-toluidine, p-	-	-	-	-	-	-	-	-
532-27-4	Chloroacetophenone, 2-	-	-	-	-	-	-	-	-
108-90-7	Chlorobenzene	-	-	-	-	-	-	-	-
98-56-6	Chlorobenzotrifluoride, 4-	-	-	-	-	-	-	-	-
75-45-6	Chlorodifluoromethane (HC	-	-	-	-	-	-	-	-
67-66-3	Chloroform	-	-	-	-	-	-	-	-
107-30-2	Chloromethyl Methyl Ether	-	-	-	-	-	-	-	-
88-73-3	Chloronitrobenzene, o-	-	-	-	-	-	-	-	-
100-00-5	Chloronitrobenzene, p-	-	-	-	-	-	-	-	-
76-06-2	Chloropicrin	-	-	-	-	-	-	-	-
126-99-8	Chloroprene	-	-	-	-	-	-	-	-
1333-82-0	Chromic acid mists and diss	-	-	-	-	-	-	-	-
7440-47-3	Chromium	-	-	-	-	-	-	-	-
18540-29-9	Chromium (Hexavalent)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18540-29-9-p	Chromium (Hexavalent) - P	-	-	-	-	-	-	-	-
CHROM-COM	Chromium Compounds	-	-	-	-	-	-	-	-
16065-83-1	Chromium(III) Compounds	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
218-01-9	Chrysene (Benzo(a)phenan	-	-	-	-	-	-	-	-
87-29-6	Cinnamyl anthranilate	-	-	-	-	-	-	-	-
10061-01-5	cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-
8007-45-2	Coal Tar	-	-	-	-	-	-	-	-
7440-48-4	Cobalt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0-00-7	Coke Oven Emissions	-	-	-	-	-	-	-	-
7440-50-8	Copper	-	-	-	-	-	-	-	-
COPPER-CO	Copper Compounds	-	-	-	-	-	-	-	-
120-71-8	Cresidine, p-	-	-	-	-	-	-	-	-
108-39-4	Cresol, m-	-	-	-	-	-	-	-	-
95-48-7	Cresol, o-	-	-	-	-	-	-	-	-
106-44-5	Cresol, p-	-	-	-	-	-	-	-	-
1319-77-3	Cresols/Cresylic acid (isome	-	-	-	-	-	-	-	-
98-82-8	Cumene	-	-	-	-	-	-	-	-
135-20-6	Cupferron	-	-	-	-	-	-	-	-
57-12-5	Cyanide (Cyanide ion, Inorg	-	-	-	-	-	-	-	-
CYANIDE-CO	Cyanide Compounds	-	-	-	-	-	-	-	-
110-82-7	Cyclohexane	-	-	-	-	-	-	-	-
108-94-1	Cyclohexanone	-	-	-	-	-	-	-	-
27208-37-3	Cyclopenta[c,d]pyrene	-	-	-	-	-	-	-	-
50-29-3	DDT	-	-	-	-	-	-	-	-
615-05-4	Diaminoanisole, 2,4-	-	-	-	-	-	-	-	-
101-80-4	Diaminodiphenyl ether, 4,4-	-	-	-	-	-	-	-	-
103-33-3	Diazene, Diphenyl	-	-	-	-	-	-	-	-
226-36-8	Dibenz(a,h)acridine	-	-	-	-	-	-	-	-
224-42-0	Dibenz(a,j)acridine	-	-	-	-	-	-	-	-
53-70-3	Dibenz[a,h]anthracene	-	-	-	-	-	-	-	-
192-65-4	Dibenzo(a,e)pyrene	-	-	-	-	-	-	-	-
189-64-0	Dibenzo(a,h)pyrene	-	-	-	-	-	-	-	-
191-30-0	Dibenzo(a,l)pyrene	-	-	-	-	-	-	-	-
194-59-2	Dibenzo(c,g)carbazole, 7H-	-	-	-	-	-	-	-	-
5385-75-1	Dibenzo[a,e]fluoranthene	-	-	-	-	-	-	-	-
189-55-9	Dibenzo[a,i]pyrene	-	-	-	-	-	-	-	-
96-12-8	Dibromo-3-chloropropane, 1	-	-	-	-	-	-	-	-
764-41-0	Dichloro-2-butene, 1,4-	-	-	-	-	-	-	-	-
1476-11-5	Dichloro-2-butene, cis-1,4-	-	-	-	-	-	-	-	-
106-46-7	Dichlorobenzene(p), 1,4-	-	-	-	-	-	-	-	-
25321-22-6	Dichlorobenzenes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
91-94-1	Dichlorobenzidene, 3,3-	-	-	-	-	-	-	-	-
75-71-8	Dichlorodifluoromethane (C	-	-	-	-	-	-	-	-
75-35-4	Dichloroethylene (1,1-) (Vin	-	-	-	-	-	-	-	-
156-60-5	Dichloroethylene, trans-1,2-	-	-	-	-	-	-	-	-
542-75-6	Dichloropropene, 1,3-	-	-	-	-	-	-	-	-
78-88-6	Dichloropropene, 2,3-	-	-	-	-	-	-	-	-
62-73-7	Dichlorvos	-	-	-	-	-	-	-	-
77-73-6	Dicyclopentadiene	-	-	-	-	-	-	-	-
60-57-1	Dieldrin	-	-	-	-	-	-	-	-
0-02-4	Diesel exhaust particulate	-	-	-	-	-	-	-	-
111-42-2	Diethanolamine	-	-	-	-	-	-	-	-
112-34-5	Diethylene Glycol Monobuty	-	-	-	-	-	-	-	-
111-90-0	Diethylene Glycol Monoethy	-	-	-	-	-	-	-	-
75-37-6	Difluoroethane, 1,1-	-	-	-	-	-	-	-	-
108-20-3	Diisopropyl Ether	-	-	-	-	-	-	-	-
60-11-7	Dimethyl aminoazobenzene	-	-	-	-	-	-	-	-
68-12-2	Dimethyl formamide	-	-	-	-	-	-	-	-
108-01-0	Dimethylamino ethanol, 2-	-	-	-	-	-	-	-	-
57-97-6	Dimethylbenz[a]anthracene,	-	-	-	-	-	-	-	-
57-14-7	Dimethylhydrazine, 1,1-	-	-	-	-	-	-	-	-
42397-64-8	Dinitropyrene, 1,6- (BaP)	-	-	-	-	-	-	-	-
42397-65-9	Dinitropyrene, 1,8- (BaP)	-	-	-	-	-	-	-	-
121-14-2	Dinitrotoluene, 2,4-	-	-	-	-	-	-	-	-
123-91-1	Dioxane, 1,4- (1,4-Diethylen	-	-	-	-	-	-	-	-
122-66-7	Diphenylhydrazine, 1,2-	-	-	-	-	-	-	-	-
106-89-8	Epichlorohydrin (l-Chloro-2,	-	-	-	-	-	-	-	-
106-88-7	Epoxybutane, 1,2-	-	-	-	-	-	-	-	-
110-80-5	Ethoxyethanol, 2- (ethylene	-	-	-	-	-	-	-	-
141-78-6	Ethyl acetate	-	-	-	-	-	-	-	-
140-88-5	Ethyl Acrylate	-	-	-	-	-	-	-	-
100-41-4	Ethyl benzene	-	-	-	-	-	-	-	-
51-79-6	Ethyl carbamate (Urethane)	-	-	-	-	-	-	-	-

75-00-3	Ethyl chloride (Chloroethane	-	-	-	-	-	-	-	-
97-63-2	Ethyl Methacrylate	-	-	-	-	-	-	-	-
106-93-4	Ethylene dibromide (Dibrom	-	-	-	-	-	-	-	-
107-06-2	Ethylene dichloride (1,2-Dic	-	-	-	-	-	-	-	-
107-21-1	Ethylene glycol	-	-	-	-	-	-	-	-
75-21-8	Ethylene oxide	-	-	-	-	-	-	-	-
96-45-7	Ethylene thiourea	-	-	-	-	-	-	-	-
75-34-3	Ethylidene dichloride (1,1-D	-	-	-	-	-	-	-	-
206-44-0	Fluoranthene	-	-	-	-	-	-	-	-
FLUORIDES	Fluorides (except hydrogen	-	-	-	-	-	-	-	-
50-00-0	Formaldehyde	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00
64-18-6	Formic Acid	-	-	-	-	-	-	-	-
111-30-8	Glutaraldehyde	-	-	-	-	-	-	-	-
0-01-2	Glycol ethers	-	-	-	-	-	-	-	-
76-44-8	Heptachlor	-	-	-	-	-	-	-	-
1024-57-3	Heptachlor epoxide	-	-	-	-	-	-	-	-
35822-46-9	Heptachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-5	Heptachlorodibenzodioxin,	-	-	-	-	-	-	-	-
67562-39-4	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
55673-89-7	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
00-08-4	Heptachlorodibenzofuran, A	-	-	-	-	-	-	-	-
142-82-5	Heptane, N	-	-	-	-	-	-	-	-
118-74-1	Hexachlorobenzene	-	-	-	-	-	-	-	-
87-68-3	Hexachlorobutadiene	-	-	-	-	-	-	-	-
608-73-1	Hexachlorocyclohexane (tec	-	-	-	-	-	-	-	-
319-84-6	Hexachlorocyclohexane, alp	-	-	-	-	-	-	-	-
319-85-7	Hexachlorocyclohexane, be	-	-	-	-	-	-	-	-
77-47-4	Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-
39227-28-6	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
57653-85-7	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
19408-74-3	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-3	Hexachlorodibenzodioxins,	-	-	-	-	-	-	-	-
70648-26-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
57117-44-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
72918-21-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
60851-34-5	Hexachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-
00-08-2	Hexachlorodibenzofurans, A	-	-	-	-	-	-	-	-
67-72-1	Hexachloroethane	-	-	-	-	-	-	-	-
822-06-0	Hexamethylene-1,6-diisocya	-	-	-	-	-	-	-	-
110-54-3	Hexane	0.25	0.09	0.02	0.01	0.20	0.06	0.02	0.01
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl	-	-	-	-	-	-	-	-
591-78-6	Hexanone-2	-	-	-	-	-	-	-	-
302-01-2	Hydrazine	-	-	-	-	-	-	-	-
10034-93-2	Hydrazine sulfate	-	-	-	-	-	-	-	-
7647-01-0	Hydrochloric acid (hydrogen	-	-	-	-	-	-	-	-
74-90-8	Hydrogen cyanide	-	-	-	-	-	-	-	-
7664-39-3	Hydrogen fluoride (Hydroflu	-	-	-	-	-	-	-	-
7783-07-5	Hydrogen selenide	-	-	-	-	-	-	-	-
7783-06-4	Hydrogen sulfide	-	-	-	-	-	-	-	-
193-39-5	Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-
5888-33-5	Isobornyl acrylate	-	-	-	-	-	-	-	-
78-59-1	Isophorone	-	-	-	-	-	-	-	-
67-63-0	Isopropyl alcohol	-	-	-	-	-	-	-	-
7439-92-1	Lead	-	-	-	-	-	-	-	-
7758-97-6	Lead Chromate	-	-	-	-	-	-	-	-
LEAD-COMP	Lead Compounds	-	-	-	-	-	-	-	-
58-89-9	Lindane (all isomers)	-	-	-	-	-	-	-	-
108-31-6	Maleic anhydride	-	-	-	-	-	-	-	-
7439-96-5	Manganese	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MANGANESE	Manganese Compounds	-	-	-	-	-	-	-	-
7439-97-6	Mercury (elemental)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MERCURY-C	Mercury Compounds	-	-	-	-	-	-	-	-
126-98-7	Methacrylonitrile	-	-	-	-	-	-	-	-
67-56-1	Methanol	-	-	-	-	-	-	-	-
109-86-4	Methoxyethanol, 2- (ethylen	-	-	-	-	-	-	-	-
96-33-3	Methyl acrylate	-	-	-	-	-	-	-	-
110-49-6	Methyl Cellosolve Acetate	-	-	-	-	-	-	-	-
74-87-3	Methyl chloride (Chlorometh	-	-	-	-	-	-	-	-
71-55-6	Methyl chloroform (1,1,1-Tri	-	-	-	-	-	-	-	-
78-93-3	Methyl ethyl ketone (2-Buta	-	-	-	-	-	-	-	-
60-34-4	Methyl Hydrazine	-	-	-	-	-	-	-	-
108-10-1	Methyl isobutyl ketone (Hex	-	-	-	-	-	-	-	-
624-83-9	Methyl isocyanate	-	-	-	-	-	-	-	-
80-62-6	Methyl methacrylate	-	-	-	-	-	-	-	-
1634-04-4	Methyl tert butyl ether	-	-	-	-	-	-	-	-
56-49-5	Methylcholanthrene, 3-	-	-	-	-	-	-	-	-
3697-24-3	Methylchrysene, 5-	-	-	-	-	-	-	-	-
101-14-4	Methylene bis(2-chloroanilin	-	-	-	-	-	-	-	-
74-95-3	Methylene Bromide	-	-	-	-	-	-	-	-
75-09-2	Methylene chloride (Dichlor	-	-	-	-	-	-	-	-
101-68-8	Methylene diphenyl diisocya	-	-	-	-	-	-	-	-
101-77-9	Methylenedianiline, 4,4-	-	-	-	-	-	-	-	-
90-94-8	Michler's ketone	-	-	-	-	-	-	-	-
10595-95-6	N- Nitrosomethylethylamine	-	-	-	-	-	-	-	-
924-16-3	N-Nitrosodi-n-butylamine	-	-	-	-	-	-	-	-
621-64-7	N-Nitrosodi-n-propylamine	-	-	-	-	-	-	-	-
55-18-5	N-Nitrosodiethylamine	-	-	-	-	-	-	-	-
62-75-9	N-Nitrosodimethylamine	-	-	-	-	-	-	-	-
86-30-6	N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-
59-89-2	N-Nitrosomorpholine	-	-	-	-	-	-	-	-
100-75-4	N-Nitrosopiperidine	-	-	-	-	-	-	-	-

111-84-2	N-Nonane	-	-	-	-	-	-	-	-
64724-95-6	Naphtha, High Flash Aroma	-	-	-	-	-	-	-	-
91-20-3	Naphthalene	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
193-09-9	Naphtho[2,3-e]pyrene	-	-	-	-	-	-	-	-
7440-02-0	Nickel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NICKEL-COM	Nickel Compounds	-	-	-	-	-	-	-	-
1313-99-1	Nickel oxide	-	-	-	-	-	-	-	-
0-02-5	Nickel refinery dust from the	-	-	-	-	-	-	-	-
12035-72-2	Nickel sulfide (NI3S2)	-	-	-	-	-	-	-	-
7697-37-2	Nitric acid	-	-	-	-	-	-	-	-
139-13-9	Nitrilotriacetic acid	-	-	-	-	-	-	-	-
18662-53-8	Nitrilotriacetic acid, trisodiu	-	-	-	-	-	-	-	-
602-87-9	Nitroacenaphthene, 5-	-	-	-	-	-	-	-	-
88-74-4	Nitroaniline, 2-	-	-	-	-	-	-	-	-
100-01-6	Nitroaniline, 4-	-	-	-	-	-	-	-	-
98-95-3	Nitrobenzene	-	-	-	-	-	-	-	-
7496-02-8	Nitrochrysene, 6-	-	-	-	-	-	-	-	-
607-57-8	Nitrofluorene, 2-	-	-	-	-	-	-	-	-
10102-44-0	Nitrogen dioxide (NO2)	14.02	4.91	0.98	0.58	11.36	3.47	0.95	0.58
75-52-5	Nitromethane	-	-	-	-	-	-	-	-
79-46-9	Nitropropane, 2-	-	-	-	-	-	-	-	-
5522-43-0	Nitropyrene, 1-	-	-	-	-	-	-	-	-
57835-92-4	Nitropyrene, 4-	-	-	-	-	-	-	-	-
156-10-5	Nitrosodiphenylamine, p-	-	-	-	-	-	-	-	-
3268-87-9	Octachlorodibenzo-p-dioxin,	-	-	-	-	-	-	-	-
39001-02-0	Octachlorodibenzofuran, 1,2	-	-	-	-	-	-	-	-
10028-15-6	Ozone	-	-	-	-	-	-	-	-
74472-37-0	PCB 114 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
31508-00-6	PCB 118 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
65510-44-3	PCB 123 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
57465-28-8	PCB 126 (3,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
38380-0804	PCB 156 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Hep	-	-	-	-	-	-	-	-
32598-13-3	PCB 77 (3,3,4,4-Tetrachloro	-	-	-	-	-	-	-	-
70362-50-4	PCB 81 (3,4,4,5 Tetrachloro	-	-	-	-	-	-	-	-
32598-14-4	PCB105 (2,3,3,4,4 Pentachl	-	-	-	-	-	-	-	-
40321-76-4	Pentachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-1	Pentachlorodibenzodioxins,	-	-	-	-	-	-	-	-
57117-41-6	Pentachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
57117-31-4	Pentachlorodibenzofuran, 2	-	-	-	-	-	-	-	-
00-09-0	Pentachlorodibenzofurans,	-	-	-	-	-	-	-	-
87-86-5	Pentachlorophenol	-	-	-	-	-	-	-	-
109-66-0	Pentane, n-	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
85-01-8	Phenanthrene	-	-	-	-	-	-	-	-
108-95-2	Phenol	-	-	-	-	-	-	-	-
75-44-5	Phosgene	-	-	-	-	-	-	-	-
7803-51-2	Phosphine	-	-	-	-	-	-	-	-
7664-38-2	Phosphoric acid	-	-	-	-	-	-	-	-
85-44-9	Phthalic anhydride	-	-	-	-	-	-	-	-
59536-65-1	Polybrominated Biphenyls	-	-	-	-	-	-	-	-
1336-36-3	Polychlorinated biphenyls (A	-	-	-	-	-	-	-	-
00-08-0	Polychlorinated Dibenzo-P-	-	-	-	-	-	-	-	-
00-05-0	Polychlorinated Dibenzodio	-	-	-	-	-	-	-	-
00-05-1	Polychlorinated Dibenzofura	-	-	-	-	-	-	-	-
130498-29-2	Polycyclic Aromatic Hydroca	-	-	-	-	-	-	-	-
00-01-7	Polycyclic Organic Matter (P	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9016-87-9	Polymeric diphenylmethane	-	-	-	-	-	-	-	-
7758-01-2	Potassium bromate	-	-	-	-	-	-	-	-
1120-71-4	Propane sultone, 1,3-	-	-	-	-	-	-	-	-
57-57-8	Propiolactone, beta-	-	-	-	-	-	-	-	-
123-38-6	Propionaldehyde	-	-	-	-	-	-	-	-
115-07-1	Propylene	-	-	-	-	-	-	-	-
78-87-5	Propylene dichloride (1,2-Di	-	-	-	-	-	-	-	-
107-98-2	Propylene Glycol Monometh	-	-	-	-	-	-	-	-
75-56-9	Propylene oxide	-	-	-	-	-	-	-	-
930-55-2	Pyrrolidine, 1-Nitroso-	-	-	-	-	-	-	-	-
7782-49-2	Selenium	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0-01-9	Selenium Compounds	-	-	-	-	-	-	-	-
7631-86-9	Silica (crystalline, respirable	-	-	-	-	-	-	-	-
1310-73-2	Sodium hydroxide	-	-	-	-	-	-	-	-
10588-01-9	Sodium Dichromate	-	-	-	-	-	-	-	-
7789-06-2	Strontium chromate	-	-	-	-	-	-	-	-
100-42-5	Styrene	-	-	-	-	-	-	-	-
96-09-3	Styrene oxide	-	-	-	-	-	-	-	-
14808-79-8	Sulfates	-	-	-	-	-	-	-	-
126-33-0	Sulfolane	-	-	-	-	-	-	-	-
7446-09-5	Sulfur dioxide	0.08	0.03	0.01	0.00	0.07	0.02	0.01	0.00
7664-93-9	Sulfuric acid (aerosol forms	-	-	-	-	-	-	-	-
8014-95-7	Sulfuric Acid mixture w. sulf	-	-	-	-	-	-	-	-
00-09-1	TCDD Eqivalents, 2,3,7,8-	-	-	-	-	-	-	-	-
540-88-5	Tert-Butyl Acetate	-	-	-	-	-	-	-	-
1746-01-6	Tetrachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-8	Tetrachlorodibenzodioxins,	-	-	-	-	-	-	-	-
51207-31-9	Tetrachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-

00-08-6	Tetrachlorodibenzofurans, A	-	-	-	-	-	-	-	-
630-20-6	Tetrachloroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
79-34-5	Tetrachloroethane, 1,1,2,2-	-	-	-	-	-	-	-	-
127-18-4	Tetrachloroethylene (Perchl	-	-	-	-	-	-	-	-
811-97-2	Tetrafluoroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
109-99-9	Tetrahydrofuran	-	-	-	-	-	-	-	-
62-55-5	Thioacetamide	-	-	-	-	-	-	-	-
62-56-6	Thiourea	-	-	-	-	-	-	-	-
108-88-3	Toluene	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
584-84-9	Toluene-2,4-diisocyanate	-	-	-	-	-	-	-	-
91-08-7	Toluene-2,6-diisocyanate	-	-	-	-	-	-	-	-
95-80-7	Toluene diamine, 2,4-	-	-	-	-	-	-	-	-
26471-62-5	Toluenediisocyanate (mixed	-	-	-	-	-	-	-	-
95-53-4	Toluidine, o- (Methylaniline,	-	-	-	-	-	-	-	-
8001-35-2	Toxaphene (chlorinated ca	-	-	-	-	-	-	-	-
10061-02-6	trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-
120-82-1	Trichlorobenzene, 1,2,4-	-	-	-	-	-	-	-	-
79-00-5	Trichloroethane, 1,1,2-	-	-	-	-	-	-	-	-
79-01-6	Trichloroethylene (TCE)	-	-	-	-	-	-	-	-
75-69-4	Trichlorofluoromethane (CF	-	-	-	-	-	-	-	-
88-06-2	Trichlorophenol, 2,4,6-	-	-	-	-	-	-	-	-
96-18-4	Trichloropropane, 1,2,3-	-	-	-	-	-	-	-	-
96-19-5	Trichloropropene, 1,2,3-	-	-	-	-	-	-	-	-
76-13-1	Trichlorotrifluoroethane, 1,1	-	-	-	-	-	-	-	-
121-44-8	Triethylamine	-	-	-	-	-	-	-	-
420-46-2	Trifluoroethane, 1,1,1-	-	-	-	-	-	-	-	-
526-73-8	Trimethylbenzene, 1,2,3-	-	-	-	-	-	-	-	-
95-63-6	Trimethylbenzene, 1,2,4-	-	-	-	-	-	-	-	-
108-67-8	Trimethylbenzene, 1,3,5-	-	-	-	-	-	-	-	-
URANIUM-SO	Uranium (Soluble Salts)	-	-	-	-	-	-	-	-
7440-61-1	Uranium, Insoluble Compou	-	-	-	-	-	-	-	-
7440-62-2	Vanadium and Compounds	-	-	-	-	-	-	-	-
1314-62-1	Vanadium Pentoxide, (V2O	-	-	-	-	-	-	-	-
108-05-4	Vinyl acetate	-	-	-	-	-	-	-	-
593-60-2	Vinyl bromide	-	-	-	-	-	-	-	-
75-01-4	Vinyl chloride	-	-	-	-	-	-	-	-
1330-20-7	Xylenes	-	-	-	-	-	-	-	-
108-38-3	Xylenes, m-	-	-	-	-	-	-	-	-
95-47-6	Xylenes, o-	-	-	-	-	-	-	-	-
106-42-3	Xylenes, p-	-	-	-	-	-	-	-	-
13530-65-9	Zinc chromate	-	-	-	-	-	-	-	-

RASS version: 2020-12

No inputs needed on this page

Air Concentrations in ug/m3

		Stack #34				Stack #35			
CAS# or MPCA#	**Chemical Name**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**
202-94-8	11H-Benz[b,c]aceanthrylene	-	-	-	-	-	-	-	-
202-98-2	4H-Cyclopenta[d,e,f]chrysen	-	-	-	-	-	-	-	-
75-07-0	Acetaldehyde	-	-	-	-	-	-	-	-
60-35-5	Acetamide	-	-	-	-	-	-	-	-
67-64-1	Acetone	-	-	-	-	-	-	-	-
75-86-5	Acetone Cyanohydrin	-	-	-	-	-	-	-	-
75-05-8	Acetonitrile	-	-	-	-	-	-	-	-
53-96-3	Acetylaminofluorene, 2-	-	-	-	-	-	-	-	-
107-02-8	Acrolein	-	-	-	-	-	-	-	-
79-06-1	Acrylamide	-	-	-	-	-	-	-	-
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-	-	-	-	-	-	-	-	-
79-10-7	Acrylic acid	-	-	-	-	-	-	-	-
107-13-1	Acrylonitrile	-	-	-	-	-	-	-	-
111-69-3	Adiponitrile	-	-	-	-	-	-	-	-
ALDEHYDES	Aldehydes	-	-	-	-	-	-	-	-
309-00-2	Aldrin	-	-	-	-	-	-	-	-
ALIPHATIC-M	Aliphatic Hydrocarbon Strea	-	-	-	-	-	-	-	-
107-05-1	Allyl chloride	-	-	-	-	-	-	-	-
7429-90-5	Aluminum	-	-	-	-	-	-	-	-
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3	-	-	-	-	-	-	-	-
6109-97-3	Amino-9-ethylcarbazolehydr	-	-	-	-	-	-	-	-
117-79-3	Aminoanthraquinone, 2-	-	-	-	-	-	-	-	-
7664-41-7	Ammonia	-	-	-	-	-	-	-	-
62-53-3	Aniline	-	-	-	-	-	-	-	-
191-26-4	Anthanthrene	-	-	-	-	-	-	-	-
7440-36-0	Antimony	-	-	-	-	-	-	-	-
ANTIMONY-C	Antimony Compounds	-	-	-	-	-	-	-	-
1309-64-4	Antimony trioxide	-	-	-	-	-	-	-	-
140-57-8	Aramite	-	-	-	-	-	-	-	-
7440-38-2	Arsenic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ARSENIC-CO	Arsenic Compounds	-	-	-	-	-	-	-	-
1327-53-3	Arsenic Trioxide	-	-	-	-	-	-	-	-
7784-42-1	Arsine	-	-	-	-	-	-	-	-
1332-21-4	Asbestos (units in fibers)	-	-	-	-	-	-	-	-
1332-21-4-LA	Asbestos, Libby Amphibole	-	-	-	-	-	-	-	-
123-77-3	Azodicarbonamide	-	-	-	-	-	-	-	-
10294-40-3	Barium Chromate	-	-	-	-	-	-	-	-
199-54-2	Benz[e]aceanthrylene	-	-	-	-	-	-	-	-
202-33-5	Benz[j]aceanthrylene	-	-	-	-	-	-	-	-
211-91-6	Benz[l]aceanthrylene	-	-	-	-	-	-	-	-
71-43-2	Benzene	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
92-87-5	Benzidine	-	-	-	-	-	-	-	-
205-82-3	Benzo(j)fluoranthene	-	-	-	-	-	-	-	-
207-08-9	Benzo(k)fluoranthene	-	-	-	-	-	-	-	-
56-55-3	Benzo[a]anthracene	-	-	-	-	-	-	-	-
50-32-8	Benzo[a]pyrene	-	-	-	-	-	-	-	-
205-99-2	Benzo[b]fluoranthene	-	-	-	-	-	-	-	-
205-12-9	Benzo[c]fluorene	-	-	-	-	-	-	-	-
191-24-2	Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-
65-85-0	Benzoic Acid	-	-	-	-	-	-	-	-
100-44-7	Benzyl chloride	-	-	-	-	-	-	-	-
7440-41-7	Beryllium	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BERYLLIUM-	Beryllium Compounds	-	-	-	-	-	-	-	-
13510-49-1	Beryllium sulfate	-	-	-	-	-	-	-	-
111-44-4	Bis(2-chloroethyl)ether	-	-	-	-	-	-	-	-
117-81-7	Bis(2-ethylhexyl)phthalate (	-	-	-	-	-	-	-	-
542-88-1	Bis(chloromethyl)ether	-	-	-	-	-	-	-	-
7440-42-8	Boron And Borates Only	-	-	-	-	-	-	-	-
10294-34-5	Boron Trichloride	-	-	-	-	-	-	-	-
7637-07-2	Boron Trifluoride	-	-	-	-	-	-	-	-
108-86-1	Bromobenzene	-	-	-	-	-	-	-	-
74-97-5	Bromochloromethane	-	-	-	-	-	-	-	-
75-27-4	Bromodichloromethane	-	-	-	-	-	-	-	-
75-25-2	Bromoform	-	-	-	-	-	-	-	-
74-83-9	Bromomethane	-	-	-	-	-	-	-	-
106-94-5	Bromopropane, 1-	-	-	-	-	-	-	-	-
106-99-0	Butadiene, 1,3-	-	-	-	-	-	-	-	-
78-92-2	Butyl alcohol, sec-	-	-	-	-	-	-	-	-
111-76-2	Butyl Cellosolve (ethylene g	-	-	-	-	-	-	-	-
25013-16-5	Butylated hydroxyanisole	-	-	-	-	-	-	-	-
3068-88-0	Butyrolactone, beta-	-	-	-	-	-	-	-	-
7440-43-9	Cadmium	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CADMIUM-CO	Cadmium Compounds	-	-	-	-	-	-	-	-
13765-19-0	Calcium Chromate	-	-	-	-	-	-	-	-
105-60-2	Caprolactum	-	-	-	-	-	-	-	-
75-15-0	Carbon disulfide	-	-	-	-	-	-	-	-
630-08-0	Carbon Monoxide	10.12	3.20	0.80	0.49	26.90	9.59	2.47	1.26
56-23-5	Carbon tetrachloride	-	-	-	-	-	-	-	-
463-58-1	Carbonyl sulfide	-	-	-	-	-	-	-	-
111-15-9	Cellosolve Acetate (ethylen	-	-	-	-	-	-	-	-
1306-38-3	Cerium Oxide and Cerium C	-	-	-	-	-	-	-	-
12789-03-6	Chlordane or (57-74-9)	-	-	-	-	-	-	-	-
115-28-6	Chlorendic acid	-	-	-	-	-	-	-	-
108171-26-2	Chlorinated Paraffins (C12,	-	-	-	-	-	-	-	-
7782-50-5	Chlorine	-	-	-	-	-	-	-	-

10049-04-4	Chlorine Oxide (CLO2)	-	-	-	-	-	-	-	-
75-68-3	Chloro-1,1-difluoroethane, 1	-	-	-	-	-	-	-	-
563-47-3	Chloro-2-methylpropene, 3-	-	-	-	-	-	-	-	-
95-83-0	Chloro-o-phenylenediamine	-	-	-	-	-	-	-	-
95-69-2	Chloro-o-toluidine, p-	-	-	-	-	-	-	-	-
532-27-4	Chloroacetophenone, 2-	-	-	-	-	-	-	-	-
108-90-7	Chlorobenzene	-	-	-	-	-	-	-	-
98-56-6	Chlorobenzotrifluoride, 4-	-	-	-	-	-	-	-	-
75-45-6	Chlorodifluoromethane (HC	-	-	-	-	-	-	-	-
67-66-3	Chloroform	-	-	-	-	-	-	-	-
107-30-2	Chloromethyl Methyl Ether	-	-	-	-	-	-	-	-
88-73-3	Chloronitrobenzene, o-	-	-	-	-	-	-	-	-
100-00-5	Chloronitrobenzene, p-	-	-	-	-	-	-	-	-
76-06-2	Chloropicrin	-	-	-	-	-	-	-	-
126-99-8	Chloroprene	-	-	-	-	-	-	-	-
1333-82-0	Chromic acid mists and diss	-	-	-	-	-	-	-	-
7440-47-3	Chromium	-	-	-	-	-	-	-	-
18540-29-9	Chromium (Hexavalent)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18540-29-9-p	Chromium (Hexavalent) - P	-	-	-	-	-	-	-	-
CHROM-COM	Chromium Compounds	-	-	-	-	-	-	-	-
16065-83-1	Chromium(III) Compounds	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
218-01-9	Chrysene (Benzo(a)phenan	-	-	-	-	-	-	-	-
87-29-6	Cinnamyl anthranilate	-	-	-	-	-	-	-	-
10061-01-5	cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-
8007-45-2	Coal Tar	-	-	-	-	-	-	-	-
7440-48-4	Cobalt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0-00-7	Coke Oven Emissions	-	-	-	-	-	-	-	-
7440-50-8	Copper	-	-	-	-	-	-	-	-
COPPER-CO	Copper Compounds	-	-	-	-	-	-	-	-
120-71-8	Cresidine, p-	-	-	-	-	-	-	-	-
108-39-4	Cresol, m-	-	-	-	-	-	-	-	-
95-48-7	Cresol, o-	-	-	-	-	-	-	-	-
106-44-5	Cresol, p-	-	-	-	-	-	-	-	-
1319-77-3	Cresols/Cresylic acid (isome	-	-	-	-	-	-	-	-
98-82-8	Cumene	-	-	-	-	-	-	-	-
135-20-6	Cupferron	-	-	-	-	-	-	-	-
57-12-5	Cyanide (Cyanide ion, Inorg	-	-	-	-	-	-	-	-
CYANIDE-CO	Cyanide Compounds	-	-	-	-	-	-	-	-
110-82-7	Cyclohexane	-	-	-	-	-	-	-	-
108-94-1	Cyclohexanone	-	-	-	-	-	-	-	-
27208-37-3	Cyclopenta[c,d]pyrene	-	-	-	-	-	-	-	-
50-29-3	DDT	-	-	-	-	-	-	-	-
615-05-4	Diaminoanisole, 2,4-	-	-	-	-	-	-	-	-
101-80-4	Diaminodiphenyl ether, 4,4-	-	-	-	-	-	-	-	-
103-33-3	Diazene, Diphenyl	-	-	-	-	-	-	-	-
226-36-8	Dibenz(a,h)acridine	-	-	-	-	-	-	-	-
224-42-0	Dibenz(a,j)acridine	-	-	-	-	-	-	-	-
53-70-3	Dibenz[a,h]anthracene	-	-	-	-	-	-	-	-
192-65-4	Dibenzo(a,e)pyrene	-	-	-	-	-	-	-	-
189-64-0	Dibenzo(a,h)pyrene	-	-	-	-	-	-	-	-
191-30-0	Dibenzo(a,l)pyrene	-	-	-	-	-	-	-	-
194-59-2	Dibenzo(c,g)carbazole, 7H-	-	-	-	-	-	-	-	-
5385-75-1	Dibenzo[a,e]fluoranthene	-	-	-	-	-	-	-	-
189-55-9	Dibenzo[a,i]pyrene	-	-	-	-	-	-	-	-
96-12-8	Dibromo-3-chloropropane, 1	-	-	-	-	-	-	-	-
764-41-0	Dichloro-2-butene, 1,4-	-	-	-	-	-	-	-	-
1476-11-5	Dichloro-2-butene, cis-1,4-	-	-	-	-	-	-	-	-
106-46-7	Dichlorobenzene(p), 1,4-	-	-	-	-	-	-	-	-
25321-22-6	Dichlorobenzenes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
91-94-1	Dichlorobenzidene, 3,3-	-	-	-	-	-	-	-	-
75-71-8	Dichlorodifluoromethane (C	-	-	-	-	-	-	-	-
75-35-4	Dichloroethylene (1,1-) (Vin	-	-	-	-	-	-	-	-
156-60-5	Dichloroethylene, trans-1,2-	-	-	-	-	-	-	-	-
542-75-6	Dichloropropene, 1,3-	-	-	-	-	-	-	-	-
78-88-6	Dichloropropene, 2,3-	-	-	-	-	-	-	-	-
62-73-7	Dichlorvos	-	-	-	-	-	-	-	-
77-73-6	Dicyclopentadiene	-	-	-	-	-	-	-	-
60-57-1	Dieldrin	-	-	-	-	-	-	-	-
0-02-4	Diesel exhaust particulate	-	-	-	-	-	-	-	-
111-42-2	Diethanolamine	-	-	-	-	-	-	-	-
112-34-5	Diethylene Glycol Monobuty	-	-	-	-	-	-	-	-
111-90-0	Diethylene Glycol Monoethy	-	-	-	-	-	-	-	-
75-37-6	Difluoroethane, 1,1-	-	-	-	-	-	-	-	-
108-20-3	Diisopropyl Ether	-	-	-	-	-	-	-	-
60-11-7	Dimethyl aminoazobenzene	-	-	-	-	-	-	-	-
68-12-2	Dimethyl formamide	-	-	-	-	-	-	-	-
108-01-0	Dimethylamino ethanol, 2-	-	-	-	-	-	-	-	-
57-97-6	Dimethylbenz[a]anthracene,	-	-	-	-	-	-	-	-
57-14-7	Dimethylhydrazine, 1,1-	-	-	-	-	-	-	-	-
42397-64-8	Dinitropyrene, 1,6- (BaP)	-	-	-	-	-	-	-	-
42397-65-9	Dinitropyrene, 1,8- (BaP)	-	-	-	-	-	-	-	-
121-14-2	Dinitrotoluene, 2,4-	-	-	-	-	-	-	-	-
123-91-1	Dioxane, 1,4- (1,4-Diethylen	-	-	-	-	-	-	-	-
122-66-7	Diphenylhydrazine, 1,2-	-	-	-	-	-	-	-	-
106-89-8	Epichlorohydrin (l-Chloro-2,	-	-	-	-	-	-	-	-
106-88-7	Epoxybutane, 1,2-	-	-	-	-	-	-	-	-
110-80-5	Ethoxyethanol, 2- (ethylene	-	-	-	-	-	-	-	-
141-78-6	Ethyl acetate	-	-	-	-	-	-	-	-
140-88-5	Ethyl Acrylate	-	-	-	-	-	-	-	-
100-41-4	Ethyl benzene	-	-	-	-	-	-	-	-
51-79-6	Ethyl carbamate (Urethane)	-	-	-	-	-	-	-	-

75-00-3	Ethyl chloride (Chloroethane	-	-	-	-	-	-	-	-
97-63-2	Ethyl Methacrylate	-	-	-	-	-	-	-	-
106-93-4	Ethylene dibromide (Dibrom	-	-	-	-	-	-	-	-
107-06-2	Ethylene dichloride (1,2-Dic	-	-	-	-	-	-	-	-
107-21-1	Ethylene glycol	-	-	-	-	-	-	-	-
75-21-8	Ethylene oxide	-	-	-	-	-	-	-	-
96-45-7	Ethylene thiourea	-	-	-	-	-	-	-	-
75-34-3	Ethylidene dichloride (1,1-D	-	-	-	-	-	-	-	-
206-44-0	Fluoranthene	-	-	-	-	-	-	-	-
FLUORIDES	Fluorides (except hydrogen	-	-	-	-	-	-	-	-
50-00-0	Formaldehyde	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00
64-18-6	Formic Acid	-	-	-	-	-	-	-	-
111-30-8	Glutaraldehyde	-	-	-	-	-	-	-	-
0-01-2	Glycol ethers	-	-	-	-	-	-	-	-
76-44-8	Heptachlor	-	-	-	-	-	-	-	-
1024-57-3	Heptachlor epoxide	-	-	-	-	-	-	-	-
35822-46-9	Heptachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-5	Heptachlorodibenzodioxin,	-	-	-	-	-	-	-	-
67562-39-4	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
55673-89-7	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
00-08-4	Heptachlorodibenzofuran, A	-	-	-	-	-	-	-	-
142-82-5	Heptane, N	-	-	-	-	-	-	-	-
118-74-1	Hexachlorobenzene	-	-	-	-	-	-	-	-
87-68-3	Hexachlorobutadiene	-	-	-	-	-	-	-	-
608-73-1	Hexachlorocyclohexane (tec	-	-	-	-	-	-	-	-
319-84-6	Hexachlorocyclohexane, alp	-	-	-	-	-	-	-	-
319-85-7	Hexachlorocyclohexane, be	-	-	-	-	-	-	-	-
77-47-4	Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-
39227-28-6	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
57653-85-7	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
19408-74-3	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-3	Hexachlorodibenzodioxins,	-	-	-	-	-	-	-	-
70648-26-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
57117-44-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
72918-21-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
60851-34-5	Hexachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-
00-08-2	Hexachlorodibenzofurans, A	-	-	-	-	-	-	-	-
67-72-1	Hexachloroethane	-	-	-	-	-	-	-	-
822-06-0	Hexamethylene-1,6-diisocya	-	-	-	-	-	-	-	-
110-54-3	Hexane	0.22	0.07	0.02	0.01	0.14	0.05	0.01	0.01
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl	-	-	-	-	-	-	-	-
591-78-6	Hexanone-2	-	-	-	-	-	-	-	-
302-01-2	Hydrazine	-	-	-	-	-	-	-	-
10034-93-2	Hydrazine sulfate	-	-	-	-	-	-	-	-
7647-01-0	Hydrochloric acid (hydrogen	-	-	-	-	-	-	-	-
74-90-8	Hydrogen cyanide	-	-	-	-	-	-	-	-
7664-39-3	Hydrogen fluoride (Hydroflu	-	-	-	-	-	-	-	-
7783-07-5	Hydrogen selenide	-	-	-	-	-	-	-	-
7783-06-4	Hydrogen sulfide	-	-	-	-	-	-	-	-
193-39-5	Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-
5888-33-5	Isobornyl acrylate	-	-	-	-	-	-	-	-
78-59-1	Isophorone	-	-	-	-	-	-	-	-
67-63-0	Isopropyl alcohol	-	-	-	-	-	-	-	-
7439-92-1	Lead	-	-	-	-	-	-	-	-
7758-97-6	Lead Chromate	-	-	-	-	-	-	-	-
LEAD-COMP	Lead Compounds	-	-	-	-	-	-	-	-
58-89-9	Lindane (all isomers)	-	-	-	-	-	-	-	-
108-31-6	Maleic anhydride	-	-	-	-	-	-	-	-
7439-96-5	Manganese	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MANGANESE	Manganese Compounds	-	-	-	-	-	-	-	-
7439-97-6	Mercury (elemental)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MERCURY-C	Mercury Compounds	-	-	-	-	-	-	-	-
126-98-7	Methacrylonitrile	-	-	-	-	-	-	-	-
67-56-1	Methanol	-	-	-	-	-	-	-	-
109-86-4	Methoxyethanol, 2- (ethylen	-	-	-	-	-	-	-	-
96-33-3	Methyl acrylate	-	-	-	-	-	-	-	-
110-49-6	Methyl Cellosolve Acetate	-	-	-	-	-	-	-	-
74-87-3	Methyl chloride (Chlorometh	-	-	-	-	-	-	-	-
71-55-6	Methyl chloroform (1,1,1-Tri	-	-	-	-	-	-	-	-
78-93-3	Methyl ethyl ketone (2-Buta	-	-	-	-	-	-	-	-
60-34-4	Methyl Hydrazine	-	-	-	-	-	-	-	-
108-10-1	Methyl isobutyl ketone (Hex	-	-	-	-	-	-	-	-
624-83-9	Methyl isocyanate	-	-	-	-	-	-	-	-
80-62-6	Methyl methacrylate	-	-	-	-	-	-	-	-
1634-04-4	Methyl tert butyl ether	-	-	-	-	-	-	-	-
56-49-5	Methylcholanthrene, 3-	-	-	-	-	-	-	-	-
3697-24-3	Methylchrysene, 5-	-	-	-	-	-	-	-	-
101-14-4	Methylene bis(2-chloroanilin	-	-	-	-	-	-	-	-
74-95-3	Methylene Bromide	-	-	-	-	-	-	-	-
75-09-2	Methylene chloride (Dichlor	-	-	-	-	-	-	-	-
101-68-8	Methylene diphenyl diisocya	-	-	-	-	-	-	-	-
101-77-9	Methylenedianiline, 4,4-	-	-	-	-	-	-	-	-
90-94-8	Michler's ketone	-	-	-	-	-	-	-	-
10595-95-6	N- Nitrosomethylethylamine	-	-	-	-	-	-	-	-
924-16-3	N-Nitrosodi-n-butylamine	-	-	-	-	-	-	-	-
621-64-7	N-Nitrosodi-n-propylamine	-	-	-	-	-	-	-	-
55-18-5	N-Nitrosodiethylamine	-	-	-	-	-	-	-	-
62-75-9	N-Nitrosodimethylamine	-	-	-	-	-	-	-	-
86-30-6	N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-
59-89-2	N-Nitrosomorpholine	-	-	-	-	-	-	-	-
100-75-4	N-Nitrosopiperidine	-	-	-	-	-	-	-	-

111-84-2	N-Nonane	-	-	-	-	-	-	-	-
64724-95-6	Naphtha, High Flash Aroma	-	-	-	-	-	-	-	-
91-20-3	Naphthalene	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
193-09-9	Naphtho[2,3-e]pyrene	-	-	-	-	-	-	-	-
7440-02-0	Nickel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NICKEL-COM	Nickel Compounds	-	-	-	-	-	-	-	-
1313-99-1	Nickel oxide	-	-	-	-	-	-	-	-
0-02-5	Nickel refinery dust from the	-	-	-	-	-	-	-	-
12035-72-2	Nickel sulfide (NI3S2)	-	-	-	-	-	-	-	-
7697-37-2	Nitric acid	-	-	-	-	-	-	-	-
139-13-9	Nitrilotriacetic acid	-	-	-	-	-	-	-	-
18662-53-8	Nitrilotriacetic acid, trisodiu	-	-	-	-	-	-	-	-
602-87-9	Nitroacenaphthene, 5-	-	-	-	-	-	-	-	-
88-74-4	Nitroaniline, 2-	-	-	-	-	-	-	-	-
100-01-6	Nitroaniline, 4-	-	-	-	-	-	-	-	-
98-95-3	Nitrobenzene	-	-	-	-	-	-	-	-
7496-02-8	Nitrochrysene, 6-	-	-	-	-	-	-	-	-
607-57-8	Nitrofluorene, 2-	-	-	-	-	-	-	-	-
10102-44-0	Nitrogen dioxide (NO2)	12.05	3.81	0.95	0.58	8.01	2.85	0.74	0.37
75-52-5	Nitromethane	-	-	-	-	-	-	-	-
79-46-9	Nitropropane, 2-	-	-	-	-	-	-	-	-
5522-43-0	Nitropyrene, 1-	-	-	-	-	-	-	-	-
57835-92-4	Nitropyrene, 4-	-	-	-	-	-	-	-	-
156-10-5	Nitrosodiphenylamine, p-	-	-	-	-	-	-	-	-
3268-87-9	Octachlorodibenzo-p-dioxin,	-	-	-	-	-	-	-	-
39001-02-0	Octachlorodibenzofuran, 1,2	-	-	-	-	-	-	-	-
10028-15-6	Ozone	-	-	-	-	-	-	-	-
74472-37-0	PCB 114 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
31508-00-6	PCB 118 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
65510-44-3	PCB 123 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
57465-28-8	PCB 126 (3,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
38380-0804	PCB 156 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Hep	-	-	-	-	-	-	-	-
32598-13-3	PCB 77 (3,3,4,4-Tetrachloro	-	-	-	-	-	-	-	-
70362-50-4	PCB 81 (3,4,4,5 Tetrachloro	-	-	-	-	-	-	-	-
32598-14-4	PCB105 (2,3,3,4,4 Pentachl	-	-	-	-	-	-	-	-
40321-76-4	Pentachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-1	Pentachlorodibenzodioxins,	-	-	-	-	-	-	-	-
57117-41-6	Pentachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
57117-31-4	Pentachlorodibenzofuran, 2	-	-	-	-	-	-	-	-
00-09-0	Pentachlorodibenzofurans,	-	-	-	-	-	-	-	-
87-86-5	Pentachlorophenol	-	-	-	-	-	-	-	-
109-66-0	Pentane, n-	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
85-01-8	Phenanthrene	-	-	-	-	-	-	-	-
108-95-2	Phenol	-	-	-	-	-	-	-	-
75-44-5	Phosgene	-	-	-	-	-	-	-	-
7803-51-2	Phosphine	-	-	-	-	-	-	-	-
7664-38-2	Phosphoric acid	-	-	-	-	-	-	-	-
85-44-9	Phthalic anhydride	-	-	-	-	-	-	-	-
59536-65-1	Polybrominated Biphenyls	-	-	-	-	-	-	-	-
1336-36-3	Polychlorinated biphenyls (A	-	-	-	-	-	-	-	-
00-08-0	Polychlorinated Dibenzo-P-	-	-	-	-	-	-	-	-
00-05-0	Polychlorinated Dibenzodio	-	-	-	-	-	-	-	-
00-05-1	Polychlorinated Dibenzofura	-	-	-	-	-	-	-	-
130498-29-2	Polycyclic Aromatic Hydroca	-	-	-	-	-	-	-	-
00-01-7	Polycyclic Organic Matter (P	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9016-87-9	Polymeric diphenylmethane	-	-	-	-	-	-	-	-
7758-01-2	Potassium bromate	-	-	-	-	-	-	-	-
1120-71-4	Propane sultone, 1,3-	-	-	-	-	-	-	-	-
57-57-8	Propiolactone, beta-	-	-	-	-	-	-	-	-
123-38-6	Propionaldehyde	-	-	-	-	-	-	-	-
115-07-1	Propylene	-	-	-	-	-	-	-	-
78-87-5	Propylene dichloride (1,2-Di	-	-	-	-	-	-	-	-
107-98-2	Propylene Glycol Monometh	-	-	-	-	-	-	-	-
75-56-9	Propylene oxide	-	-	-	-	-	-	-	-
930-55-2	Pyrrolidine, 1-Nitroso-	-	-	-	-	-	-	-	-
7782-49-2	Selenium	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0-01-9	Selenium Compounds	-	-	-	-	-	-	-	-
7631-86-9	Silica (crystalline, respirable	-	-	-	-	-	-	-	-
1310-73-2	Sodium hydroxide	-	-	-	-	-	-	-	-
10588-01-9	Sodium Dichromate	-	-	-	-	-	-	-	-
7789-06-2	Strontium chromate	-	-	-	-	-	-	-	-
100-42-5	Styrene	-	-	-	-	-	-	-	-
96-09-3	Styrene oxide	-	-	-	-	-	-	-	-
14808-79-8	Sulfates	-	-	-	-	-	-	-	-
126-33-0	Sulfolane	-	-	-	-	-	-	-	-
7446-09-5	Sulfur dioxide	0.07	0.02	0.01	0.00	0.05	0.02	0.00	0.00
7664-93-9	Sulfuric acid (aerosol forms	-	-	-	-	-	-	-	-
8014-95-7	Sulfuric Acid mixture w. sulf	-	-	-	-	-	-	-	-
00-09-1	TCDD Eqivalents, 2,3,7,8-	-	-	-	-	-	-	-	-
540-88-5	Tert-Butyl Acetate	-	-	-	-	-	-	-	-
1746-01-6	Tetrachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-8	Tetrachlorodibenzodioxins,	-	-	-	-	-	-	-	-
51207-31-9	Tetrachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-

00-08-6	Tetrachlorodibenzofurans, A	-	-	-	-	-	-	-	-
630-20-6	Tetrachloroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
79-34-5	Tetrachloroethane, 1,1,2,2-	-	-	-	-	-	-	-	-
127-18-4	Tetrachloroethylene (Perchl	-	-	-	-	-	-	-	-
811-97-2	Tetrafluoroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
109-99-9	Tetrahydrofuran	-	-	-	-	-	-	-	-
62-55-5	Thioacetamide	-	-	-	-	-	-	-	-
62-56-6	Thiourea	-	-	-	-	-	-	-	-
108-88-3	Toluene	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
584-84-9	Toluene-2,4-diisocyanate	-	-	-	-	-	-	-	-
91-08-7	Toluene-2,6-diisocyanate	-	-	-	-	-	-	-	-
95-80-7	Toluene diamine, 2,4-	-	-	-	-	-	-	-	-
26471-62-5	Toluenediisocyanate (mixed	-	-	-	-	-	-	-	-
95-53-4	Toluidine, o- (Methylaniline,	-	-	-	-	-	-	-	-
8001-35-2	Toxaphene (chlorinated ca	-	-	-	-	-	-	-	-
10061-02-6	trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-
120-82-1	Trichlorobenzene, 1,2,4-	-	-	-	-	-	-	-	-
79-00-5	Trichloroethane, 1,1,2-	-	-	-	-	-	-	-	-
79-01-6	Trichloroethylene (TCE)	-	-	-	-	-	-	-	-
75-69-4	Trichlorofluoromethane (CF	-	-	-	-	-	-	-	-
88-06-2	Trichlorophenol, 2,4,6-	-	-	-	-	-	-	-	-
96-18-4	Trichloropropane, 1,2,3-	-	-	-	-	-	-	-	-
96-19-5	Trichloropropene, 1,2,3-	-	-	-	-	-	-	-	-
76-13-1	Trichlorotrifluoroethane, 1,1	-	-	-	-	-	-	-	-
121-44-8	Triethylamine	-	-	-	-	-	-	-	-
420-46-2	Trifluoroethane, 1,1,1-	-	-	-	-	-	-	-	-
526-73-8	Trimethylbenzene, 1,2,3-	-	-	-	-	-	-	-	-
95-63-6	Trimethylbenzene, 1,2,4-	-	-	-	-	-	-	-	-
108-67-8	Trimethylbenzene, 1,3,5-	-	-	-	-	-	-	-	-
URANIUM-SO	Uranium (Soluble Salts)	-	-	-	-	-	-	-	-
7440-61-1	Uranium, Insoluble Compou	-	-	-	-	-	-	-	-
7440-62-2	Vanadium and Compounds	-	-	-	-	-	-	-	-
1314-62-1	Vanadium Pentoxide, (V2O	-	-	-	-	-	-	-	-
108-05-4	Vinyl acetate	-	-	-	-	-	-	-	-
593-60-2	Vinyl bromide	-	-	-	-	-	-	-	-
75-01-4	Vinyl chloride	-	-	-	-	-	-	-	-
1330-20-7	Xylenes	-	-	-	-	-	-	-	-
108-38-3	Xylenes, m-	-	-	-	-	-	-	-	-
95-47-6	Xylenes, o-	-	-	-	-	-	-	-	-
106-42-3	Xylenes, p-	-	-	-	-	-	-	-	-
13530-65-9	Zinc chromate	-	-	-	-	-	-	-	-

RASS version: 2020-12

No inputs needed on this page

Air Concentrations in ug/m3

		Stack #36				Stack #37			
CAS# or MPCA#	**Chemical Name**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**
202-94-8	11H-Benz[b,c]aceanthrylene	-	-	-	-	-	-	-	-
202-98-2	4H-Cyclopenta[d,e,f]chrysen	-	-	-	-	-	-	-	-
75-07-0	Acetaldehyde	-	-	-	-	-	-	-	-
60-35-5	Acetamide	-	-	-	-	-	-	-	-
67-64-1	Acetone	-	-	-	-	-	-	-	-
75-86-5	Acetone Cyanohydrin	-	-	-	-	-	-	-	-
75-05-8	Acetonitrile	-	-	-	-	-	-	-	-
53-96-3	Acetylaminofluorene, 2-	-	-	-	-	-	-	-	-
107-02-8	Acrolein	-	-	-	-	-	-	-	-
79-06-1	Acrylamide	-	-	-	-	-	-	-	-
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-	-	-	-	-	-	-	-	-
79-10-7	Acrylic acid	-	-	-	-	-	-	-	-
107-13-1	Acrylonitrile	-	-	-	-	-	-	-	-
111-69-3	Adiponitrile	-	-	-	-	-	-	-	-
ALDEHYDES	Aldehydes	-	-	-	-	-	-	-	-
309-00-2	Aldrin	-	-	-	-	-	-	-	-
ALIPHATIC-M	Aliphatic Hydrocarbon Strea	-	-	-	-	-	-	-	-
107-05-1	Allyl chloride	-	-	-	-	-	-	-	-
7429-90-5	Aluminum	-	-	-	-	-	-	-	-
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3	-	-	-	-	-	-	-	-
6109-97-3	Amino-9-ethylcarbazolehydr	-	-	-	-	-	-	-	-
117-79-3	Aminoanthraquinone, 2-	-	-	-	-	-	-	-	-
7664-41-7	Ammonia	-	-	-	-	-	-	-	-
62-53-3	Aniline	-	-	-	-	-	-	-	-
191-26-4	Anthanthrene	-	-	-	-	-	-	-	-
7440-36-0	Antimony	-	-	-	-	-	-	-	-
ANTIMONY-C	Antimony Compounds	-	-	-	-	-	-	-	-
1309-64-4	Antimony trioxide	-	-	-	-	-	-	-	-
140-57-8	Aramite	-	-	-	-	-	-	-	-
7440-38-2	Arsenic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ARSENIC-CO	Arsenic Compounds	-	-	-	-	-	-	-	-
1327-53-3	Arsenic Trioxide	-	-	-	-	-	-	-	-
7784-42-1	Arsine	-	-	-	-	-	-	-	-
1332-21-4	Asbestos (units in fibers)	-	-	-	-	-	-	-	-
1332-21-4-LA	Asbestos, Libby Amphibole	-	-	-	-	-	-	-	-
123-77-3	Azodicarbonamide	-	-	-	-	-	-	-	-
10294-40-3	Barium Chromate	-	-	-	-	-	-	-	-
199-54-2	Benz[e]aceanthrylene	-	-	-	-	-	-	-	-
202-33-5	Benz[j]aceanthrylene	-	-	-	-	-	-	-	-
211-91-6	Benz[l]aceanthrylene	-	-	-	-	-	-	-	-
71-43-2	Benzene	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
92-87-5	Benzidine	-	-	-	-	-	-	-	-
205-82-3	Benzo(j)fluoranthene	-	-	-	-	-	-	-	-
207-08-9	Benzo(k)fluoranthene	-	-	-	-	-	-	-	-
56-55-3	Benzo[a]anthracene	-	-	-	-	-	-	-	-
50-32-8	Benzo[a]pyrene	-	-	-	-	-	-	-	-
205-99-2	Benzo[b]fluoranthene	-	-	-	-	-	-	-	-
205-12-9	Benzo[c]fluorene	-	-	-	-	-	-	-	-
191-24-2	Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-
65-85-0	Benzoic Acid	-	-	-	-	-	-	-	-
100-44-7	Benzyl chloride	-	-	-	-	-	-	-	-
7440-41-7	Beryllium	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BERYLLIUM-	Beryllium Compounds	-	-	-	-	-	-	-	-
13510-49-1	Beryllium sulfate	-	-	-	-	-	-	-	-
111-44-4	Bis(2-chloroethyl)ether	-	-	-	-	-	-	-	-
117-81-7	Bis(2-ethylhexyl)phthalate (	-	-	-	-	-	-	-	-
542-88-1	Bis(chloromethyl)ether	-	-	-	-	-	-	-	-
7440-42-8	Boron And Borates Only	-	-	-	-	-	-	-	-
10294-34-5	Boron Trichloride	-	-	-	-	-	-	-	-
7637-07-2	Boron Trifluoride	-	-	-	-	-	-	-	-
108-86-1	Bromobenzene	-	-	-	-	-	-	-	-
74-97-5	Bromochloromethane	-	-	-	-	-	-	-	-
75-27-4	Bromodichloromethane	-	-	-	-	-	-	-	-
75-25-2	Bromoform	-	-	-	-	-	-	-	-
74-83-9	Bromomethane	-	-	-	-	-	-	-	-
106-94-5	Bromopropane, 1-	-	-	-	-	-	-	-	-
106-99-0	Butadiene, 1,3-	-	-	-	-	-	-	-	-
78-92-2	Butyl alcohol, sec-	-	-	-	-	-	-	-	-
111-76-2	Butyl Cellosolve (ethylene g	-	-	-	-	-	-	-	-
25013-16-5	Butylated hydroxyanisole	-	-	-	-	-	-	-	-
3068-88-0	Butyrolactone, beta-	-	-	-	-	-	-	-	-
7440-43-9	Cadmium	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CADMIUM-CO	Cadmium Compounds	-	-	-	-	-	-	-	-
13765-19-0	Calcium Chromate	-	-	-	-	-	-	-	-
105-60-2	Caprolactum	-	-	-	-	-	-	-	-
75-15-0	Carbon disulfide	-	-	-	-	-	-	-	-
630-08-0	Carbon Monoxide	10.93	4.27	1.11	0.64	11.21	4.18	1.10	0.63
56-23-5	Carbon tetrachloride	-	-	-	-	-	-	-	-
463-58-1	Carbonyl sulfide	-	-	-	-	-	-	-	-
111-15-9	Cellosolve Acetate (ethylen	-	-	-	-	-	-	-	-
1306-38-3	Cerium Oxide and Cerium C	-	-	-	-	-	-	-	-
12789-03-6	Chlordane or (57-74-9)	-	-	-	-	-	-	-	-
115-28-6	Chlorendic acid	-	-	-	-	-	-	-	-
108171-26-2	Chlorinated Paraffins (C12,	-	-	-	-	-	-	-	-
7782-50-5	Chlorine	-	-	-	-	-	-	-	-

10049-04-4	Chlorine Oxide (CLO2)	-	-	-	-	-	-	-	-
75-68-3	Chloro-1,1-difluoroethane, 1	-	-	-	-	-	-	-	-
563-47-3	Chloro-2-methylpropene, 3-	-	-	-	-	-	-	-	-
95-83-0	Chloro-o-phenylenediamine	-	-	-	-	-	-	-	-
95-69-2	Chloro-o-toluidine, p-	-	-	-	-	-	-	-	-
532-27-4	Chloroacetophenone, 2-	-	-	-	-	-	-	-	-
108-90-7	Chlorobenzene	-	-	-	-	-	-	-	-
98-56-6	Chlorobenzotrifluoride, 4-	-	-	-	-	-	-	-	-
75-45-6	Chlorodifluoromethane (HC	-	-	-	-	-	-	-	-
67-66-3	Chloroform	-	-	-	-	-	-	-	-
107-30-2	Chloromethyl Methyl Ether	-	-	-	-	-	-	-	-
88-73-3	Chloronitrobenzene, o-	-	-	-	-	-	-	-	-
100-00-5	Chloronitrobenzene, p-	-	-	-	-	-	-	-	-
76-06-2	Chloropicrin	-	-	-	-	-	-	-	-
126-99-8	Chloroprene	-	-	-	-	-	-	-	-
1333-82-0	Chromic acid mists and diss	-	-	-	-	-	-	-	-
7440-47-3	Chromium	-	-	-	-	-	-	-	-
18540-29-9	Chromium (Hexavalent)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18540-29-9-p	Chromium (Hexavalent) - P	-	-	-	-	-	-	-	-
CHROM-COM	Chromium Compounds	-	-	-	-	-	-	-	-
16065-83-1	Chromium(III) Compounds	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
218-01-9	Chrysene (Benzo(a)phenan	-	-	-	-	-	-	-	-
87-29-6	Cinnamyl anthranilate	-	-	-	-	-	-	-	-
10061-01-5	cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-
8007-45-2	Coal Tar	-	-	-	-	-	-	-	-
7440-48-4	Cobalt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0-00-7	Coke Oven Emissions	-	-	-	-	-	-	-	-
7440-50-8	Copper	-	-	-	-	-	-	-	-
COPPER-CO	Copper Compounds	-	-	-	-	-	-	-	-
120-71-8	Cresidine, p-	-	-	-	-	-	-	-	-
108-39-4	Cresol, m-	-	-	-	-	-	-	-	-
95-48-7	Cresol, o-	-	-	-	-	-	-	-	-
106-44-5	Cresol, p-	-	-	-	-	-	-	-	-
1319-77-3	Cresols/Cresylic acid (isome	-	-	-	-	-	-	-	-
98-82-8	Cumene	-	-	-	-	-	-	-	-
135-20-6	Cupferron	-	-	-	-	-	-	-	-
57-12-5	Cyanide (Cyanide ion, Inorg	-	-	-	-	-	-	-	-
CYANIDE-CO	Cyanide Compounds	-	-	-	-	-	-	-	-
110-82-7	Cyclohexane	-	-	-	-	-	-	-	-
108-94-1	Cyclohexanone	-	-	-	-	-	-	-	-
27208-37-3	Cyclopenta[c,d]pyrene	-	-	-	-	-	-	-	-
50-29-3	DDT	-	-	-	-	-	-	-	-
615-05-4	Diaminoanisole, 2,4-	-	-	-	-	-	-	-	-
101-80-4	Diaminodiphenyl ether, 4,4-	-	-	-	-	-	-	-	-
103-33-3	Diazene, Diphenyl	-	-	-	-	-	-	-	-
226-36-8	Dibenz(a,h)acridine	-	-	-	-	-	-	-	-
224-42-0	Dibenz(a,j)acridine	-	-	-	-	-	-	-	-
53-70-3	Dibenz[a,h]anthracene	-	-	-	-	-	-	-	-
192-65-4	Dibenzo(a,e)pyrene	-	-	-	-	-	-	-	-
189-64-0	Dibenzo(a,h)pyrene	-	-	-	-	-	-	-	-
191-30-0	Dibenzo(a,l)pyrene	-	-	-	-	-	-	-	-
194-59-2	Dibenzo(c,g)carbazole, 7H-	-	-	-	-	-	-	-	-
5385-75-1	Dibenzo[a,e]fluoranthene	-	-	-	-	-	-	-	-
189-55-9	Dibenzo[a,i]pyrene	-	-	-	-	-	-	-	-
96-12-8	Dibromo-3-chloropropane, 1	-	-	-	-	-	-	-	-
764-41-0	Dichloro-2-butene, 1,4-	-	-	-	-	-	-	-	-
1476-11-5	Dichloro-2-butene, cis-1,4-	-	-	-	-	-	-	-	-
106-46-7	Dichlorobenzene(p), 1,4-	-	-	-	-	-	-	-	-
25321-22-6	Dichlorobenzenes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
91-94-1	Dichlorobenzidene, 3,3-	-	-	-	-	-	-	-	-
75-71-8	Dichlorodifluoromethane (C	-	-	-	-	-	-	-	-
75-35-4	Dichloroethylene (1,1-) (Vin	-	-	-	-	-	-	-	-
156-60-5	Dichloroethylene, trans-1,2-	-	-	-	-	-	-	-	-
542-75-6	Dichloropropene, 1,3-	-	-	-	-	-	-	-	-
78-88-6	Dichloropropene, 2,3-	-	-	-	-	-	-	-	-
62-73-7	Dichlorvos	-	-	-	-	-	-	-	-
77-73-6	Dicyclopentadiene	-	-	-	-	-	-	-	-
60-57-1	Dieldrin	-	-	-	-	-	-	-	-
0-02-4	Diesel exhaust particulate	-	-	-	-	-	-	-	-
111-42-2	Diethanolamine	-	-	-	-	-	-	-	-
112-34-5	Diethylene Glycol Monobuty	-	-	-	-	-	-	-	-
111-90-0	Diethylene Glycol Monoethy	-	-	-	-	-	-	-	-
75-37-6	Difluoroethane, 1,1-	-	-	-	-	-	-	-	-
108-20-3	Diisopropyl Ether	-	-	-	-	-	-	-	-
60-11-7	Dimethyl aminoazobenzene	-	-	-	-	-	-	-	-
68-12-2	Dimethyl formamide	-	-	-	-	-	-	-	-
108-01-0	Dimethylamino ethanol, 2-	-	-	-	-	-	-	-	-
57-97-6	Dimethylbenz[a]anthracene,	-	-	-	-	-	-	-	-
57-14-7	Dimethylhydrazine, 1,1-	-	-	-	-	-	-	-	-
42397-64-8	Dinitropyrene, 1,6- (BaP)	-	-	-	-	-	-	-	-
42397-65-9	Dinitropyrene, 1,8- (BaP)	-	-	-	-	-	-	-	-
121-14-2	Dinitrotoluene, 2,4-	-	-	-	-	-	-	-	-
123-91-1	Dioxane, 1,4- (1,4-Diethylen	-	-	-	-	-	-	-	-
122-66-7	Diphenylhydrazine, 1,2-	-	-	-	-	-	-	-	-
106-89-8	Epichlorohydrin (l-Chloro-2,	-	-	-	-	-	-	-	-
106-88-7	Epoxybutane, 1,2-	-	-	-	-	-	-	-	-
110-80-5	Ethoxyethanol, 2- (ethylene	-	-	-	-	-	-	-	-
141-78-6	Ethyl acetate	-	-	-	-	-	-	-	-
140-88-5	Ethyl Acrylate	-	-	-	-	-	-	-	-
100-41-4	Ethyl benzene	-	-	-	-	-	-	-	-
51-79-6	Ethyl carbamate (Urethane)	-	-	-	-	-	-	-	-

75-00-3	Ethyl chloride (Chloroethane	-	-	-	-	-	-	-	-
97-63-2	Ethyl Methacrylate	-	-	-	-	-	-	-	-
106-93-4	Ethylene dibromide (Dibrom	-	-	-	-	-	-	-	-
107-06-2	Ethylene dichloride (1,2-Dic	-	-	-	-	-	-	-	-
107-21-1	Ethylene glycol	-	-	-	-	-	-	-	-
75-21-8	Ethylene oxide	-	-	-	-	-	-	-	-
96-45-7	Ethylene thiourea	-	-	-	-	-	-	-	-
75-34-3	Ethylidene dichloride (1,1-D	-	-	-	-	-	-	-	-
206-44-0	Fluoranthene	-	-	-	-	-	-	-	-
FLUORIDES	Fluorides (except hydrogen	-	-	-	-	-	-	-	-
50-00-0	Formaldehyde	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00
64-18-6	Formic Acid	-	-	-	-	-	-	-	-
111-30-8	Glutaraldehyde	-	-	-	-	-	-	-	-
0-01-2	Glycol ethers	-	-	-	-	-	-	-	-
76-44-8	Heptachlor	-	-	-	-	-	-	-	-
1024-57-3	Heptachlor epoxide	-	-	-	-	-	-	-	-
35822-46-9	Heptachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-5	Heptachlorodibenzodioxin,	-	-	-	-	-	-	-	-
67562-39-4	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
55673-89-7	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
00-08-4	Heptachlorodibenzofuran, A	-	-	-	-	-	-	-	-
142-82-5	Heptane, N	-	-	-	-	-	-	-	-
118-74-1	Hexachlorobenzene	-	-	-	-	-	-	-	-
87-68-3	Hexachlorobutadiene	-	-	-	-	-	-	-	-
608-73-1	Hexachlorocyclohexane (tec	-	-	-	-	-	-	-	-
319-84-6	Hexachlorocyclohexane, alp	-	-	-	-	-	-	-	-
319-85-7	Hexachlorocyclohexane, be	-	-	-	-	-	-	-	-
77-47-4	Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-
39227-28-6	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
57653-85-7	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
19408-74-3	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-3	Hexachlorodibenzodioxins,	-	-	-	-	-	-	-	-
70648-26-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
57117-44-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
72918-21-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
60851-34-5	Hexachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-
00-08-2	Hexachlorodibenzofurans, A	-	-	-	-	-	-	-	-
67-72-1	Hexachloroethane	-	-	-	-	-	-	-	-
822-06-0	Hexamethylene-1,6-diisocya	-	-	-	-	-	-	-	-
110-54-3	Hexane	0.23	0.09	0.02	0.01	0.24	0.09	0.02	0.01
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl	-	-	-	-	-	-	-	-
591-78-6	Hexanone-2	-	-	-	-	-	-	-	-
302-01-2	Hydrazine	-	-	-	-	-	-	-	-
10034-93-2	Hydrazine sulfate	-	-	-	-	-	-	-	-
7647-01-0	Hydrochloric acid (hydrogen	-	-	-	-	-	-	-	-
74-90-8	Hydrogen cyanide	-	-	-	-	-	-	-	-
7664-39-3	Hydrogen fluoride (Hydroflu	-	-	-	-	-	-	-	-
7783-07-5	Hydrogen selenide	-	-	-	-	-	-	-	-
7783-06-4	Hydrogen sulfide	-	-	-	-	-	-	-	-
193-39-5	Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-
5888-33-5	Isobornyl acrylate	-	-	-	-	-	-	-	-
78-59-1	Isophorone	-	-	-	-	-	-	-	-
67-63-0	Isopropyl alcohol	-	-	-	-	-	-	-	-
7439-92-1	Lead	-	-	-	-	-	-	-	-
7758-97-6	Lead Chromate	-	-	-	-	-	-	-	-
LEAD-COMP	Lead Compounds	-	-	-	-	-	-	-	-
58-89-9	Lindane (all isomers)	-	-	-	-	-	-	-	-
108-31-6	Maleic anhydride	-	-	-	-	-	-	-	-
7439-96-5	Manganese	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MANGANESE	Manganese Compounds	-	-	-	-	-	-	-	-
7439-97-6	Mercury (elemental)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MERCURY-C	Mercury Compounds	-	-	-	-	-	-	-	-
126-98-7	Methacrylonitrile	-	-	-	-	-	-	-	-
67-56-1	Methanol	-	-	-	-	-	-	-	-
109-86-4	Methoxyethanol, 2- (ethylen	-	-	-	-	-	-	-	-
96-33-3	Methyl acrylate	-	-	-	-	-	-	-	-
110-49-6	Methyl Cellosolve Acetate	-	-	-	-	-	-	-	-
74-87-3	Methyl chloride (Chlorometh	-	-	-	-	-	-	-	-
71-55-6	Methyl chloroform (1,1,1-Tri	-	-	-	-	-	-	-	-
78-93-3	Methyl ethyl ketone (2-Buta	-	-	-	-	-	-	-	-
60-34-4	Methyl Hydrazine	-	-	-	-	-	-	-	-
108-10-1	Methyl isobutyl ketone (Hex	-	-	-	-	-	-	-	-
624-83-9	Methyl isocyanate	-	-	-	-	-	-	-	-
80-62-6	Methyl methacrylate	-	-	-	-	-	-	-	-
1634-04-4	Methyl tert butyl ether	-	-	-	-	-	-	-	-
56-49-5	Methylcholanthrene, 3-	-	-	-	-	-	-	-	-
3697-24-3	Methylchrysene, 5-	-	-	-	-	-	-	-	-
101-14-4	Methylene bis(2-chloroanilin	-	-	-	-	-	-	-	-
74-95-3	Methylene Bromide	-	-	-	-	-	-	-	-
75-09-2	Methylene chloride (Dichlor	-	-	-	-	-	-	-	-
101-68-8	Methylene diphenyl diisocya	-	-	-	-	-	-	-	-
101-77-9	Methylenedianiline, 4,4-	-	-	-	-	-	-	-	-
90-94-8	Michler's ketone	-	-	-	-	-	-	-	-
10595-95-6	N- Nitrosomethylethylamine	-	-	-	-	-	-	-	-
924-16-3	N-Nitrosodi-n-butylamine	-	-	-	-	-	-	-	-
621-64-7	N-Nitrosodi-n-propylamine	-	-	-	-	-	-	-	-
55-18-5	N-Nitrosodiethylamine	-	-	-	-	-	-	-	-
62-75-9	N-Nitrosodimethylamine	-	-	-	-	-	-	-	-
86-30-6	N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-
59-89-2	N-Nitrosomorpholine	-	-	-	-	-	-	-	-
100-75-4	N-Nitrosopiperidine	-	-	-	-	-	-	-	-

111-84-2	N-Nonane	-	-	-	-	-	-	-	-
64724-95-6	Naphtha, High Flash Aroma	-	-	-	-	-	-	-	-
91-20-3	Naphthalene	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
193-09-9	Naphtho[2,3-e]pyrene	-	-	-	-	-	-	-	-
7440-02-0	Nickel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NICKEL-COM	Nickel Compounds	-	-	-	-	-	-	-	-
1313-99-1	Nickel oxide	-	-	-	-	-	-	-	-
0-02-5	Nickel refinery dust from the	-	-	-	-	-	-	-	-
12035-72-2	Nickel sulfide (NI3S2)	-	-	-	-	-	-	-	-
7697-37-2	Nitric acid	-	-	-	-	-	-	-	-
139-13-9	Nitrilotriacetic acid	-	-	-	-	-	-	-	-
18662-53-8	Nitrilotriacetic acid, trisodiu	-	-	-	-	-	-	-	-
602-87-9	Nitroacenaphthene, 5-	-	-	-	-	-	-	-	-
88-74-4	Nitroaniline, 2-	-	-	-	-	-	-	-	-
100-01-6	Nitroaniline, 4-	-	-	-	-	-	-	-	-
98-95-3	Nitrobenzene	-	-	-	-	-	-	-	-
7496-02-8	Nitrochrysene, 6-	-	-	-	-	-	-	-	-
607-57-8	Nitrofluorene, 2-	-	-	-	-	-	-	-	-
10102-44-0	Nitrogen dioxide (NO2)	13.01	5.09	1.32	0.76	13.34	4.97	1.30	0.74
75-52-5	Nitromethane	-	-	-	-	-	-	-	-
79-46-9	Nitropropane, 2-	-	-	-	-	-	-	-	-
5522-43-0	Nitropyrene, 1-	-	-	-	-	-	-	-	-
57835-92-4	Nitropyrene, 4-	-	-	-	-	-	-	-	-
156-10-5	Nitrosodiphenylamine, p-	-	-	-	-	-	-	-	-
3268-87-9	Octachlorodibenzo-p-dioxin,	-	-	-	-	-	-	-	-
39001-02-0	Octachlorodibenzofuran, 1,2	-	-	-	-	-	-	-	-
10028-15-6	Ozone	-	-	-	-	-	-	-	-
74472-37-0	PCB 114 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
31508-00-6	PCB 118 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
65510-44-3	PCB 123 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
57465-28-8	PCB 126 (3,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
38380-0804	PCB 156 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Hep	-	-	-	-	-	-	-	-
32598-13-3	PCB 77 (3,3,4,4-Tetrachloro	-	-	-	-	-	-	-	-
70362-50-4	PCB 81 (3,4,4,5 Tetrachloro	-	-	-	-	-	-	-	-
32598-14-4	PCB105 (2,3,3,4,4 Pentachl	-	-	-	-	-	-	-	-
40321-76-4	Pentachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-1	Pentachlorodibenzodioxins,	-	-	-	-	-	-	-	-
57117-41-6	Pentachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
57117-31-4	Pentachlorodibenzofuran, 2	-	-	-	-	-	-	-	-
00-09-0	Pentachlorodibenzofurans,	-	-	-	-	-	-	-	-
87-86-5	Pentachlorophenol	-	-	-	-	-	-	-	-
109-66-0	Pentane, n-	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
85-01-8	Phenanthrene	-	-	-	-	-	-	-	-
108-95-2	Phenol	-	-	-	-	-	-	-	-
75-44-5	Phosgene	-	-	-	-	-	-	-	-
7803-51-2	Phosphine	-	-	-	-	-	-	-	-
7664-38-2	Phosphoric acid	-	-	-	-	-	-	-	-
85-44-9	Phthalic anhydride	-	-	-	-	-	-	-	-
59536-65-1	Polybrominated Biphenyls	-	-	-	-	-	-	-	-
1336-36-3	Polychlorinated biphenyls (A	-	-	-	-	-	-	-	-
00-08-0	Polychlorinated Dibenzo-P-	-	-	-	-	-	-	-	-
00-05-0	Polychlorinated Dibenzodio	-	-	-	-	-	-	-	-
00-05-1	Polychlorinated Dibenzofura	-	-	-	-	-	-	-	-
130498-29-2	Polycyclic Aromatic Hydroca	-	-	-	-	-	-	-	-
00-01-7	Polycyclic Organic Matter (P	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9016-87-9	Polymeric diphenylmethane	-	-	-	-	-	-	-	-
7758-01-2	Potassium bromate	-	-	-	-	-	-	-	-
1120-71-4	Propane sultone, 1,3-	-	-	-	-	-	-	-	-
57-57-8	Propiolactone, beta-	-	-	-	-	-	-	-	-
123-38-6	Propionaldehyde	-	-	-	-	-	-	-	-
115-07-1	Propylene	-	-	-	-	-	-	-	-
78-87-5	Propylene dichloride (1,2-Di	-	-	-	-	-	-	-	-
107-98-2	Propylene Glycol Monometh	-	-	-	-	-	-	-	-
75-56-9	Propylene oxide	-	-	-	-	-	-	-	-
930-55-2	Pyrrolidine, 1-Nitroso-	-	-	-	-	-	-	-	-
7782-49-2	Selenium	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0-01-9	Selenium Compounds	-	-	-	-	-	-	-	-
7631-86-9	Silica (crystalline, respirable	-	-	-	-	-	-	-	-
1310-73-2	Sodium hydroxide	-	-	-	-	-	-	-	-
10588-01-9	Sodium Dichromate	-	-	-	-	-	-	-	-
7789-06-2	Strontium chromate	-	-	-	-	-	-	-	-
100-42-5	Styrene	-	-	-	-	-	-	-	-
96-09-3	Styrene oxide	-	-	-	-	-	-	-	-
14808-79-8	Sulfates	-	-	-	-	-	-	-	-
126-33-0	Sulfolane	-	-	-	-	-	-	-	-
7446-09-5	Sulfur dioxide	0.08	0.03	0.01	0.00	0.08	0.03	0.01	0.00
7664-93-9	Sulfuric acid (aerosol forms	-	-	-	-	-	-	-	-
8014-95-7	Sulfuric Acid mixture w. sulf	-	-	-	-	-	-	-	-
00-09-1	TCDD Eqivalents, 2,3,7,8-	-	-	-	-	-	-	-	-
540-88-5	Tert-Butyl Acetate	-	-	-	-	-	-	-	-
1746-01-6	Tetrachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-8	Tetrachlorodibenzodioxins,	-	-	-	-	-	-	-	-
51207-31-9	Tetrachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-

00-08-6	Tetrachlorodibenzofurans, A	-	-	-	-	-	-	-	-
630-20-6	Tetrachloroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
79-34-5	Tetrachloroethane, 1,1,2,2-	-	-	-	-	-	-	-	-
127-18-4	Tetrachloroethylene (Perchl	-	-	-	-	-	-	-	-
811-97-2	Tetrafluoroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
109-99-9	Tetrahydrofuran	-	-	-	-	-	-	-	-
62-55-5	Thioacetamide	-	-	-	-	-	-	-	-
62-56-6	Thiourea	-	-	-	-	-	-	-	-
108-88-3	Toluene	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
584-84-9	Toluene-2,4-diisocyanate	-	-	-	-	-	-	-	-
91-08-7	Toluene-2,6-diisocyanate	-	-	-	-	-	-	-	-
95-80-7	Toluene diamine, 2,4-	-	-	-	-	-	-	-	-
26471-62-5	Toluenediisocyanate (mixed	-	-	-	-	-	-	-	-
95-53-4	Toluidine, o- (Methylaniline,	-	-	-	-	-	-	-	-
8001-35-2	Toxaphene (chlorinated ca	-	-	-	-	-	-	-	-
10061-02-6	trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-
120-82-1	Trichlorobenzene, 1,2,4-	-	-	-	-	-	-	-	-
79-00-5	Trichloroethane, 1,1,2-	-	-	-	-	-	-	-	-
79-01-6	Trichloroethylene (TCE)	-	-	-	-	-	-	-	-
75-69-4	Trichlorofluoromethane (CF	-	-	-	-	-	-	-	-
88-06-2	Trichlorophenol, 2,4,6-	-	-	-	-	-	-	-	-
96-18-4	Trichloropropane, 1,2,3-	-	-	-	-	-	-	-	-
96-19-5	Trichloropropene, 1,2,3-	-	-	-	-	-	-	-	-
76-13-1	Trichlorotrifluoroethane, 1,1	-	-	-	-	-	-	-	-
121-44-8	Triethylamine	-	-	-	-	-	-	-	-
420-46-2	Trifluoroethane, 1,1,1-	-	-	-	-	-	-	-	-
526-73-8	Trimethylbenzene, 1,2,3-	-	-	-	-	-	-	-	-
95-63-6	Trimethylbenzene, 1,2,4-	-	-	-	-	-	-	-	-
108-67-8	Trimethylbenzene, 1,3,5-	-	-	-	-	-	-	-	-
URANIUM-SO	Uranium (Soluble Salts)	-	-	-	-	-	-	-	-
7440-61-1	Uranium, Insoluble Compou	-	-	-	-	-	-	-	-
7440-62-2	Vanadium and Compounds	-	-	-	-	-	-	-	-
1314-62-1	Vanadium Pentoxide, (V2O	-	-	-	-	-	-	-	-
108-05-4	Vinyl acetate	-	-	-	-	-	-	-	-
593-60-2	Vinyl bromide	-	-	-	-	-	-	-	-
75-01-4	Vinyl chloride	-	-	-	-	-	-	-	-
1330-20-7	Xylenes	-	-	-	-	-	-	-	-
108-38-3	Xylenes, m-	-	-	-	-	-	-	-	-
95-47-6	Xylenes, o-	-	-	-	-	-	-	-	-
106-42-3	Xylenes, p-	-	-	-	-	-	-	-	-
13530-65-9	Zinc chromate	-	-	-	-	-	-	-	-

RASS version: 2020-12

No inputs needed on this page

Air Concentrations in ug/m3

		Stack #38				Stack #39			
CAS# or MPCA#	**Chemical Name**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**
202-94-8	11H-Benz[b,c]aceanthrylene	-	-	-	-	-	-	-	-
202-98-2	4H-Cyclopenta[d,e,f]chrysen	-	-	-	-	-	-	-	-
75-07-0	Acetaldehyde	-	-	-	-	-	-	-	-
60-35-5	Acetamide	-	-	-	-	-	-	-	-
67-64-1	Acetone	-	-	-	-	-	-	-	-
75-86-5	Acetone Cyanohydrin	-	-	-	-	-	-	-	-
75-05-8	Acetonitrile	-	-	-	-	-	-	-	-
53-96-3	Acetylaminofluorene, 2-	-	-	-	-	-	-	-	-
107-02-8	Acrolein	-	-	-	-	-	-	-	-
79-06-1	Acrylamide	-	-	-	-	-	-	-	-
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-	-	-	-	-	-	-	-	-
79-10-7	Acrylic acid	-	-	-	-	-	-	-	-
107-13-1	Acrylonitrile	-	-	-	-	-	-	-	-
111-69-3	Adiponitrile	-	-	-	-	-	-	-	-
ALDEHYDES	Aldehydes	-	-	-	-	-	-	-	-
309-00-2	Aldrin	-	-	-	-	-	-	-	-
ALIPHATIC-M	Aliphatic Hydrocarbon Strea	-	-	-	-	-	-	-	-
107-05-1	Allyl chloride	-	-	-	-	-	-	-	-
7429-90-5	Aluminum	-	-	-	-	-	-	-	-
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3	-	-	-	-	-	-	-	-
6109-97-3	Amino-9-ethylcarbazolehydr	-	-	-	-	-	-	-	-
117-79-3	Aminoanthraquinone, 2-	-	-	-	-	-	-	-	-
7664-41-7	Ammonia	-	-	-	-	-	-	-	-
62-53-3	Aniline	-	-	-	-	-	-	-	-
191-26-4	Anthanthrene	-	-	-	-	-	-	-	-
7440-36-0	Antimony	-	-	-	-	-	-	-	-
ANTIMONY-C	Antimony Compounds	-	-	-	-	-	-	-	-
1309-64-4	Antimony trioxide	-	-	-	-	-	-	-	-
140-57-8	Aramite	-	-	-	-	-	-	-	-
7440-38-2	Arsenic	0.00	0.00	0.00	0.00	-	-	-	-
ARSENIC-CO	Arsenic Compounds	-	-	-	-	-	-	-	-
1327-53-3	Arsenic Trioxide	-	-	-	-	-	-	-	-
7784-42-1	Arsine	-	-	-	-	-	-	-	-
1332-21-4	Asbestos (units in fibers)	-	-	-	-	-	-	-	-
1332-21-4-LA	Asbestos, Libby Amphibole	-	-	-	-	-	-	-	-
123-77-3	Azodicarbonamide	-	-	-	-	-	-	-	-
10294-40-3	Barium Chromate	-	-	-	-	-	-	-	-
199-54-2	Benz[e]aceanthrylene	-	-	-	-	-	-	-	-
202-33-5	Benz[j]aceanthrylene	-	-	-	-	-	-	-	-
211-91-6	Benz[l]aceanthrylene	-	-	-	-	-	-	-	-
71-43-2	Benzene	0.00	0.00	0.00	0.00	-	-	-	-
92-87-5	Benzidine	-	-	-	-	-	-	-	-
205-82-3	Benzo(j)fluoranthene	-	-	-	-	-	-	-	-
207-08-9	Benzo(k)fluoranthene	-	-	-	-	-	-	-	-
56-55-3	Benzo[a]anthracene	-	-	-	-	-	-	-	-
50-32-8	Benzo[a]pyrene	-	-	-	-	-	-	-	-
205-99-2	Benzo[b]fluoranthene	-	-	-	-	-	-	-	-
205-12-9	Benzo[c]fluorene	-	-	-	-	-	-	-	-
191-24-2	Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-
65-85-0	Benzoic Acid	-	-	-	-	-	-	-	-
100-44-7	Benzyl chloride	-	-	-	-	-	-	-	-
7440-41-7	Beryllium	0.00	0.00	0.00	0.00	-	-	-	-
BERYLLIUM-	Beryllium Compounds	-	-	-	-	-	-	-	-
13510-49-1	Beryllium sulfate	-	-	-	-	-	-	-	-
111-44-4	Bis(2-chloroethyl)ether	-	-	-	-	-	-	-	-
117-81-7	Bis(2-ethylhexyl)phthalate (	-	-	-	-	-	-	-	-
542-88-1	Bis(chloromethyl)ether	-	-	-	-	-	-	-	-
7440-42-8	Boron And Borates Only	-	-	-	-	-	-	-	-
10294-34-5	Boron Trichloride	-	-	-	-	-	-	-	-
7637-07-2	Boron Trifluoride	-	-	-	-	-	-	-	-
108-86-1	Bromobenzene	-	-	-	-	-	-	-	-
74-97-5	Bromochloromethane	-	-	-	-	-	-	-	-
75-27-4	Bromodichloromethane	-	-	-	-	-	-	-	-
75-25-2	Bromoform	-	-	-	-	-	-	-	-
74-83-9	Bromomethane	-	-	-	-	-	-	-	-
106-94-5	Bromopropane, 1-	-	-	-	-	-	-	-	-
106-99-0	Butadiene, 1,3-	-	-	-	-	-	-	-	-
78-92-2	Butyl alcohol, sec-	-	-	-	-	-	-	-	-
111-76-2	Butyl Cellosolve (ethylene g	-	-	-	-	-	-	-	-
25013-16-5	Butylated hydroxyanisole	-	-	-	-	-	-	-	-
3068-88-0	Butyrolactone, beta-	-	-	-	-	-	-	-	-
7440-43-9	Cadmium	0.00	0.00	0.00	0.00	-	-	-	-
CADMIUM-CO	Cadmium Compounds	-	-	-	-	-	-	-	-
13765-19-0	Calcium Chromate	-	-	-	-	-	-	-	-
105-60-2	Caprolactum	-	-	-	-	-	-	-	-
75-15-0	Carbon disulfide	-	-	-	-	-	-	-	-
630-08-0	Carbon Monoxide	10.84	4.03	1.10	0.61	-	-	-	-
56-23-5	Carbon tetrachloride	-	-	-	-	-	-	-	-
463-58-1	Carbonyl sulfide	-	-	-	-	-	-	-	-
111-15-9	Cellosolve Acetate (ethylen	-	-	-	-	-	-	-	-
1306-38-3	Cerium Oxide and Cerium C	-	-	-	-	-	-	-	-
12789-03-6	Chlordane or (57-74-9)	-	-	-	-	-	-	-	-
115-28-6	Chlorendic acid	-	-	-	-	-	-	-	-
108171-26-2	Chlorinated Paraffins (C12,	-	-	-	-	-	-	-	-
7782-50-5	Chlorine	-	-	-	-	-	-	-	-

10049-04-4	Chlorine Oxide (CLO2)	-	-	-	-	-	-	-	-
75-68-3	Chloro-1,1-difluoroethane, 1	-	-	-	-	-	-	-	-
563-47-3	Chloro-2-methylpropene, 3-	-	-	-	-	-	-	-	-
95-83-0	Chloro-o-phenylenediamine	-	-	-	-	-	-	-	-
95-69-2	Chloro-o-toluidine, p-	-	-	-	-	-	-	-	-
532-27-4	Chloroacetophenone, 2-	-	-	-	-	-	-	-	-
108-90-7	Chlorobenzene	-	-	-	-	-	-	-	-
98-56-6	Chlorobenzotrifluoride, 4-	-	-	-	-	-	-	-	-
75-45-6	Chlorodifluoromethane (HC	-	-	-	-	-	-	-	-
67-66-3	Chloroform	-	-	-	-	-	-	-	-
107-30-2	Chloromethyl Methyl Ether	-	-	-	-	-	-	-	-
88-73-3	Chloronitrobenzene, o-	-	-	-	-	-	-	-	-
100-00-5	Chloronitrobenzene, p-	-	-	-	-	-	-	-	-
76-06-2	Chloropicrin	-	-	-	-	-	-	-	-
126-99-8	Chloroprene	-	-	-	-	-	-	-	-
1333-82-0	Chromic acid mists and diss	-	-	-	-	-	-	-	-
7440-47-3	Chromium	-	-	-	-	-	-	-	-
18540-29-9	Chromium (Hexavalent)	0.00	0.00	0.00	0.00	-	-	-	-
18540-29-9-p	Chromium (Hexavalent) - P	-	-	-	-	-	-	-	-
CHROM-COM	Chromium Compounds	-	-	-	-	-	-	-	-
16065-83-1	Chromium(III) Compounds	0.00	0.00	0.00	0.00	-	-	-	-
218-01-9	Chrysene (Benzo(a)phenan	-	-	-	-	-	-	-	-
87-29-6	Cinnamyl anthranilate	-	-	-	-	-	-	-	-
10061-01-5	cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-
8007-45-2	Coal Tar	-	-	-	-	-	-	-	-
7440-48-4	Cobalt	0.00	0.00	0.00	0.00	-	-	-	-
0-00-7	Coke Oven Emissions	-	-	-	-	-	-	-	-
7440-50-8	Copper	-	-	-	-	-	-	-	-
COPPER-CO	Copper Compounds	-	-	-	-	-	-	-	-
120-71-8	Cresidine, p-	-	-	-	-	-	-	-	-
108-39-4	Cresol, m-	-	-	-	-	-	-	-	-
95-48-7	Cresol, o-	-	-	-	-	-	-	-	-
106-44-5	Cresol, p-	-	-	-	-	-	-	-	-
1319-77-3	Cresols/Cresylic acid (isome	-	-	-	-	-	-	-	-
98-82-8	Cumene	-	-	-	-	-	-	-	-
135-20-6	Cupferron	-	-	-	-	-	-	-	-
57-12-5	Cyanide (Cyanide ion, Inorg	-	-	-	-	-	-	-	-
CYANIDE-CO	Cyanide Compounds	-	-	-	-	-	-	-	-
110-82-7	Cyclohexane	-	-	-	-	-	-	-	-
108-94-1	Cyclohexanone	-	-	-	-	-	-	-	-
27208-37-3	Cyclopenta[c,d]pyrene	-	-	-	-	-	-	-	-
50-29-3	DDT	-	-	-	-	-	-	-	-
615-05-4	Diaminoanisole, 2,4-	-	-	-	-	-	-	-	-
101-80-4	Diaminodiphenyl ether, 4,4-	-	-	-	-	-	-	-	-
103-33-3	Diazene, Diphenyl	-	-	-	-	-	-	-	-
226-36-8	Dibenz(a,h)acridine	-	-	-	-	-	-	-	-
224-42-0	Dibenz(a,j)acridine	-	-	-	-	-	-	-	-
53-70-3	Dibenz[a,h]anthracene	-	-	-	-	-	-	-	-
192-65-4	Dibenzo(a,e)pyrene	-	-	-	-	-	-	-	-
189-64-0	Dibenzo(a,h)pyrene	-	-	-	-	-	-	-	-
191-30-0	Dibenzo(a,l)pyrene	-	-	-	-	-	-	-	-
194-59-2	Dibenzo(c,g)carbazole, 7H-	-	-	-	-	-	-	-	-
5385-75-1	Dibenzo[a,e]fluoranthene	-	-	-	-	-	-	-	-
189-55-9	Dibenzo[a,i]pyrene	-	-	-	-	-	-	-	-
96-12-8	Dibromo-3-chloropropane, 1	-	-	-	-	-	-	-	-
764-41-0	Dichloro-2-butene, 1,4-	-	-	-	-	-	-	-	-
1476-11-5	Dichloro-2-butene, cis-1,4-	-	-	-	-	-	-	-	-
106-46-7	Dichlorobenzene(p), 1,4-	-	-	-	-	-	-	-	-
25321-22-6	Dichlorobenzenes	0.00	0.00	0.00	0.00	-	-	-	-
91-94-1	Dichlorobenzidene, 3,3-	-	-	-	-	-	-	-	-
75-71-8	Dichlorodifluoromethane (C	-	-	-	-	-	-	-	-
75-35-4	Dichloroethylene (1,1-) (Vin	-	-	-	-	-	-	-	-
156-60-5	Dichloroethylene, trans-1,2-	-	-	-	-	11.90	4.09	1.26	0.64
542-75-6	Dichloropropene, 1,3-	-	-	-	-	-	-	-	-
78-88-6	Dichloropropene, 2,3-	-	-	-	-	-	-	-	-
62-73-7	Dichlorvos	-	-	-	-	-	-	-	-
77-73-6	Dicyclopentadiene	-	-	-	-	-	-	-	-
60-57-1	Dieldrin	-	-	-	-	-	-	-	-
0-02-4	Diesel exhaust particulate	-	-	-	-	-	-	-	-
111-42-2	Diethanolamine	-	-	-	-	-	-	-	-
112-34-5	Diethylene Glycol Monobuty	-	-	-	-	-	-	-	-
111-90-0	Diethylene Glycol Monoethy	-	-	-	-	-	-	-	-
75-37-6	Difluoroethane, 1,1-	-	-	-	-	-	-	-	-
108-20-3	Diisopropyl Ether	-	-	-	-	-	-	-	-
60-11-7	Dimethyl aminoazobenzene	-	-	-	-	-	-	-	-
68-12-2	Dimethyl formamide	-	-	-	-	-	-	-	-
108-01-0	Dimethylamino ethanol, 2-	-	-	-	-	-	-	-	-
57-97-6	Dimethylbenz[a]anthracene,	-	-	-	-	-	-	-	-
57-14-7	Dimethylhydrazine, 1,1-	-	-	-	-	-	-	-	-
42397-64-8	Dinitropyrene, 1,6- (BaP)	-	-	-	-	-	-	-	-
42397-65-9	Dinitropyrene, 1,8- (BaP)	-	-	-	-	-	-	-	-
121-14-2	Dinitrotoluene, 2,4-	-	-	-	-	-	-	-	-
123-91-1	Dioxane, 1,4- (1,4-Diethylen	-	-	-	-	-	-	-	-
122-66-7	Diphenylhydrazine, 1,2-	-	-	-	-	-	-	-	-
106-89-8	Epichlorohydrin (l-Chloro-2,	-	-	-	-	-	-	-	-
106-88-7	Epoxybutane, 1,2-	-	-	-	-	-	-	-	-
110-80-5	Ethoxyethanol, 2- (ethylene	-	-	-	-	-	-	-	-
141-78-6	Ethyl acetate	-	-	-	-	-	-	-	-
140-88-5	Ethyl Acrylate	-	-	-	-	-	-	-	-
100-41-4	Ethyl benzene	-	-	-	-	-	-	-	-
51-79-6	Ethyl carbamate (Urethane)	-	-	-	-	-	-	-	-

75-00-3	Ethyl chloride (Chloroethane	-	-	-	-	-	-	-	-
97-63-2	Ethyl Methacrylate	-	-	-	-	-	-	-	-
106-93-4	Ethylene dibromide (Dibrom	-	-	-	-	-	-	-	-
107-06-2	Ethylene dichloride (1,2-Dic	-	-	-	-	-	-	-	-
107-21-1	Ethylene glycol	-	-	-	-	-	-	-	-
75-21-8	Ethylene oxide	-	-	-	-	-	-	-	-
96-45-7	Ethylene thiourea	-	-	-	-	-	-	-	-
75-34-3	Ethylidene dichloride (1,1-D	-	-	-	-	-	-	-	-
206-44-0	Fluoranthene	-	-	-	-	-	-	-	-
FLUORIDES	Fluorides (except hydrogen	-	-	-	-	-	-	-	-
50-00-0	Formaldehyde	0.01	0.00	0.00	0.00	-	-	-	-
64-18-6	Formic Acid	-	-	-	-	-	-	-	-
111-30-8	Glutaraldehyde	-	-	-	-	-	-	-	-
0-01-2	Glycol ethers	-	-	-	-	-	-	-	-
76-44-8	Heptachlor	-	-	-	-	-	-	-	-
1024-57-3	Heptachlor epoxide	-	-	-	-	-	-	-	-
35822-46-9	Heptachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-5	Heptachlorodibenzodioxin,	-	-	-	-	-	-	-	-
67562-39-4	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
55673-89-7	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
00-08-4	Heptachlorodibenzofuran, A	-	-	-	-	-	-	-	-
142-82-5	Heptane, N	-	-	-	-	-	-	-	-
118-74-1	Hexachlorobenzene	-	-	-	-	-	-	-	-
87-68-3	Hexachlorobutadiene	-	-	-	-	-	-	-	-
608-73-1	Hexachlorocyclohexane (tec	-	-	-	-	-	-	-	-
319-84-6	Hexachlorocyclohexane, alp	-	-	-	-	-	-	-	-
319-85-7	Hexachlorocyclohexane, be	-	-	-	-	-	-	-	-
77-47-4	Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-
39227-28-6	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
57653-85-7	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
19408-74-3	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-3	Hexachlorodibenzodioxins,	-	-	-	-	-	-	-	-
70648-26-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
57117-44-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
72918-21-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
60851-34-5	Hexachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-
00-08-2	Hexachlorodibenzofurans, A	-	-	-	-	-	-	-	-
67-72-1	Hexachloroethane	-	-	-	-	-	-	-	-
822-06-0	Hexamethylene-1,6-diisocya	-	-	-	-	-	-	-	-
110-54-3	Hexane	0.23	0.09	0.02	0.01	-	-	-	-
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl	-	-	-	-	-	-	-	-
591-78-6	Hexanone-2	-	-	-	-	-	-	-	-
302-01-2	Hydrazine	-	-	-	-	-	-	-	-
10034-93-2	Hydrazine sulfate	-	-	-	-	-	-	-	-
7647-01-0	Hydrochloric acid (hydrogen	-	-	-	-	-	-	-	-
74-90-8	Hydrogen cyanide	-	-	-	-	-	-	-	-
7664-39-3	Hydrogen fluoride (Hydroflu	-	-	-	-	-	-	-	-
7783-07-5	Hydrogen selenide	-	-	-	-	-	-	-	-
7783-06-4	Hydrogen sulfide	-	-	-	-	-	-	-	-
193-39-5	Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-
5888-33-5	Isobornyl acrylate	-	-	-	-	-	-	-	-
78-59-1	Isophorone	-	-	-	-	-	-	-	-
67-63-0	Isopropyl alcohol	-	-	-	-	-	-	-	-
7439-92-1	Lead	-	-	-	-	-	-	-	-
7758-97-6	Lead Chromate	-	-	-	-	-	-	-	-
LEAD-COMP	Lead Compounds	-	-	-	-	-	-	-	-
58-89-9	Lindane (all isomers)	-	-	-	-	-	-	-	-
108-31-6	Maleic anhydride	-	-	-	-	-	-	-	-
7439-96-5	Manganese	0.00	0.00	0.00	0.00	-	-	-	-
MANGANESE	Manganese Compounds	-	-	-	-	-	-	-	-
7439-97-6	Mercury (elemental)	0.00	0.00	0.00	0.00	-	-	-	-
MERCURY-C	Mercury Compounds	-	-	-	-	-	-	-	-
126-98-7	Methacrylonitrile	-	-	-	-	-	-	-	-
67-56-1	Methanol	-	-	-	-	-	-	-	-
109-86-4	Methoxyethanol, 2- (ethylen	-	-	-	-	-	-	-	-
96-33-3	Methyl acrylate	-	-	-	-	-	-	-	-
110-49-6	Methyl Cellosolve Acetate	-	-	-	-	-	-	-	-
74-87-3	Methyl chloride (Chlorometh	-	-	-	-	-	-	-	-
71-55-6	Methyl chloroform (1,1,1-Tri	-	-	-	-	-	-	-	-
78-93-3	Methyl ethyl ketone (2-Buta	-	-	-	-	-	-	-	-
60-34-4	Methyl Hydrazine	-	-	-	-	-	-	-	-
108-10-1	Methyl isobutyl ketone (Hex	-	-	-	-	-	-	-	-
624-83-9	Methyl isocyanate	-	-	-	-	-	-	-	-
80-62-6	Methyl methacrylate	-	-	-	-	-	-	-	-
1634-04-4	Methyl tert butyl ether	-	-	-	-	-	-	-	-
56-49-5	Methylcholanthrene, 3-	-	-	-	-	-	-	-	-
3697-24-3	Methylchrysene, 5-	-	-	-	-	-	-	-	-
101-14-4	Methylene bis(2-chloroanilin	-	-	-	-	-	-	-	-
74-95-3	Methylene Bromide	-	-	-	-	-	-	-	-
75-09-2	Methylene chloride (Dichlor	-	-	-	-	-	-	-	-
101-68-8	Methylene diphenyl diisocya	-	-	-	-	-	-	-	-
101-77-9	Methylenedianiline, 4,4-	-	-	-	-	-	-	-	-
90-94-8	Michler's ketone	-	-	-	-	-	-	-	-
10595-95-6	N- Nitrosomethylethylamine	-	-	-	-	-	-	-	-
924-16-3	N-Nitrosodi-n-butylamine	-	-	-	-	-	-	-	-
621-64-7	N-Nitrosodi-n-propylamine	-	-	-	-	-	-	-	-
55-18-5	N-Nitrosodiethylamine	-	-	-	-	-	-	-	-
62-75-9	N-Nitrosodimethylamine	-	-	-	-	-	-	-	-
86-30-6	N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-
59-89-2	N-Nitrosomorpholine	-	-	-	-	-	-	-	-
100-75-4	N-Nitrosopiperidine	-	-	-	-	-	-	-	-

111-84-2	N-Nonane	-	-	-	-	-	-	-	-
64724-95-6	Naphtha, High Flash Aroma	-	-	-	-	-	-	-	-
91-20-3	Naphthalene	0.00	0.00	0.00	0.00	-	-	-	-
193-09-9	Naphtho[2,3-e]pyrene	-	-	-	-	-	-	-	-
7440-02-0	Nickel	0.00	0.00	0.00	0.00	-	-	-	-
NICKEL-COM	Nickel Compounds	-	-	-	-	-	-	-	-
1313-99-1	Nickel oxide	-	-	-	-	-	-	-	-
0-02-5	Nickel refinery dust from the	-	-	-	-	-	-	-	-
12035-72-2	Nickel sulfide (NI3S2)	-	-	-	-	-	-	-	-
7697-37-2	Nitric acid	-	-	-	-	-	-	-	-
139-13-9	Nitrilotriacetic acid	-	-	-	-	-	-	-	-
18662-53-8	Nitrilotriacetic acid, trisodiu	-	-	-	-	-	-	-	-
602-87-9	Nitroacenaphthene, 5-	-	-	-	-	-	-	-	-
88-74-4	Nitroaniline, 2-	-	-	-	-	-	-	-	-
100-01-6	Nitroaniline, 4-	-	-	-	-	-	-	-	-
98-95-3	Nitrobenzene	-	-	-	-	-	-	-	-
7496-02-8	Nitrochrysene, 6-	-	-	-	-	-	-	-	-
607-57-8	Nitrofluorene, 2-	-	-	-	-	-	-	-	-
10102-44-0	Nitrogen dioxide (NO2)	12.91	4.80	1.31	0.73	-	-	-	-
75-52-5	Nitromethane	-	-	-	-	-	-	-	-
79-46-9	Nitropropane, 2-	-	-	-	-	-	-	-	-
5522-43-0	Nitropyrene, 1-	-	-	-	-	-	-	-	-
57835-92-4	Nitropyrene, 4-	-	-	-	-	-	-	-	-
156-10-5	Nitrosodiphenylamine, p-	-	-	-	-	-	-	-	-
3268-87-9	Octachlorodibenzo-p-dioxin,	-	-	-	-	-	-	-	-
39001-02-0	Octachlorodibenzofuran, 1,2	-	-	-	-	-	-	-	-
10028-15-6	Ozone	-	-	-	-	-	-	-	-
74472-37-0	PCB 114 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
31508-00-6	PCB 118 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
65510-44-3	PCB 123 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
57465-28-8	PCB 126 (3,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
38380-0804	PCB 156 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Hep	-	-	-	-	-	-	-	-
32598-13-3	PCB 77 (3,3,4,4-Tetrachloro	-	-	-	-	-	-	-	-
70362-50-4	PCB 81 (3,4,4,5 Tetrachloro	-	-	-	-	-	-	-	-
32598-14-4	PCB105 (2,3,3,4,4 Pentachl	-	-	-	-	-	-	-	-
40321-76-4	Pentachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-1	Pentachlorodibenzodioxins,	-	-	-	-	-	-	-	-
57117-41-6	Pentachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
57117-31-4	Pentachlorodibenzofuran, 2	-	-	-	-	-	-	-	-
00-09-0	Pentachlorodibenzofurans,	-	-	-	-	-	-	-	-
87-86-5	Pentachlorophenol	-	-	-	-	-	-	-	-
109-66-0	Pentane, n-	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
85-01-8	Phenanthrene	-	-	-	-	-	-	-	-
108-95-2	Phenol	-	-	-	-	-	-	-	-
75-44-5	Phosgene	-	-	-	-	-	-	-	-
7803-51-2	Phosphine	-	-	-	-	-	-	-	-
7664-38-2	Phosphoric acid	-	-	-	-	-	-	-	-
85-44-9	Phthalic anhydride	-	-	-	-	-	-	-	-
59536-65-1	Polybrominated Biphenyls	-	-	-	-	-	-	-	-
1336-36-3	Polychlorinated biphenyls (A	-	-	-	-	-	-	-	-
00-08-0	Polychlorinated Dibenzo-P-	-	-	-	-	-	-	-	-
00-05-0	Polychlorinated Dibenzodio	-	-	-	-	-	-	-	-
00-05-1	Polychlorinated Dibenzofura	-	-	-	-	-	-	-	-
130498-29-2	Polycyclic Aromatic Hydroca	-	-	-	-	-	-	-	-
00-01-7	Polycyclic Organic Matter (P	0.00	0.00	0.00	0.00	-	-	-	-
9016-87-9	Polymeric diphenylmethane	-	-	-	-	-	-	-	-
7758-01-2	Potassium bromate	-	-	-	-	-	-	-	-
1120-71-4	Propane sultone, 1,3-	-	-	-	-	-	-	-	-
57-57-8	Propiolactone, beta-	-	-	-	-	-	-	-	-
123-38-6	Propionaldehyde	-	-	-	-	-	-	-	-
115-07-1	Propylene	-	-	-	-	-	-	-	-
78-87-5	Propylene dichloride (1,2-Di	-	-	-	-	-	-	-	-
107-98-2	Propylene Glycol Monometh	-	-	-	-	-	-	-	-
75-56-9	Propylene oxide	-	-	-	-	-	-	-	-
930-55-2	Pyrrolidine, 1-Nitroso-	-	-	-	-	-	-	-	-
7782-49-2	Selenium	0.00	0.00	0.00	0.00	-	-	-	-
0-01-9	Selenium Compounds	-	-	-	-	-	-	-	-
7631-86-9	Silica (crystalline, respirable	-	-	-	-	-	-	-	-
1310-73-2	Sodium hydroxide	-	-	-	-	-	-	-	-
10588-01-9	Sodium Dichromate	-	-	-	-	-	-	-	-
7789-06-2	Strontium chromate	-	-	-	-	-	-	-	-
100-42-5	Styrene	-	-	-	-	-	-	-	-
96-09-3	Styrene oxide	-	-	-	-	-	-	-	-
14808-79-8	Sulfates	-	-	-	-	-	-	-	-
126-33-0	Sulfolane	-	-	-	-	-	-	-	-
7446-09-5	Sulfur dioxide	0.08	0.03	0.01	0.00	-	-	-	-
7664-93-9	Sulfuric acid (aerosol forms	-	-	-	-	-	-	-	-
8014-95-7	Sulfuric Acid mixture w. sulf	-	-	-	-	-	-	-	-
00-09-1	TCDD Eqivalents, 2,3,7,8-	-	-	-	-	-	-	-	-
540-88-5	Tert-Butyl Acetate	-	-	-	-	-	-	-	-
1746-01-6	Tetrachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-8	Tetrachlorodibenzodioxins,	-	-	-	-	-	-	-	-
51207-31-9	Tetrachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-

00-08-6	Tetrachlorodibenzofurans, A	-	-	-	-	-	-	-	-
630-20-6	Tetrachloroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
79-34-5	Tetrachloroethane, 1,1,2,2-	-	-	-	-	-	-	-	-
127-18-4	Tetrachloroethylene (Perchl	-	-	-	-	-	-	-	-
811-97-2	Tetrafluoroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
109-99-9	Tetrahydrofuran	-	-	-	-	-	-	-	-
62-55-5	Thioacetamide	-	-	-	-	-	-	-	-
62-56-6	Thiourea	-	-	-	-	-	-	-	-
108-88-3	Toluene	0.00	0.00	0.00	0.00	-	-	-	-
584-84-9	Toluene-2,4-diisocyanate	-	-	-	-	-	-	-	-
91-08-7	Toluene-2,6-diisocyanate	-	-	-	-	-	-	-	-
95-80-7	Toluene diamine, 2,4-	-	-	-	-	-	-	-	-
26471-62-5	Toluenediisocyanate (mixed	-	-	-	-	-	-	-	-
95-53-4	Toluidine, o- (Methylaniline,	-	-	-	-	-	-	-	-
8001-35-2	Toxaphene (chlorinated ca	-	-	-	-	-	-	-	-
10061-02-6	trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-
120-82-1	Trichlorobenzene, 1,2,4-	-	-	-	-	-	-	-	-
79-00-5	Trichloroethane, 1,1,2-	-	-	-	-	-	-	-	-
79-01-6	Trichloroethylene (TCE)	-	-	-	-	-	-	-	-
75-69-4	Trichlorofluoromethane (CF	-	-	-	-	-	-	-	-
88-06-2	Trichlorophenol, 2,4,6-	-	-	-	-	-	-	-	-
96-18-4	Trichloropropane, 1,2,3-	-	-	-	-	-	-	-	-
96-19-5	Trichloropropene, 1,2,3-	-	-	-	-	-	-	-	-
76-13-1	Trichlorotrifluoroethane, 1,1	-	-	-	-	-	-	-	-
121-44-8	Triethylamine	-	-	-	-	-	-	-	-
420-46-2	Trifluoroethane, 1,1,1-	-	-	-	-	-	-	-	-
526-73-8	Trimethylbenzene, 1,2,3-	-	-	-	-	-	-	-	-
95-63-6	Trimethylbenzene, 1,2,4-	-	-	-	-	-	-	-	-
108-67-8	Trimethylbenzene, 1,3,5-	-	-	-	-	-	-	-	-
URANIUM-SO	Uranium (Soluble Salts)	-	-	-	-	-	-	-	-
7440-61-1	Uranium, Insoluble Compou	-	-	-	-	-	-	-	-
7440-62-2	Vanadium and Compounds	-	-	-	-	-	-	-	-
1314-62-1	Vanadium Pentoxide, (V2O	-	-	-	-	-	-	-	-
108-05-4	Vinyl acetate	-	-	-	-	-	-	-	-
593-60-2	Vinyl bromide	-	-	-	-	-	-	-	-
75-01-4	Vinyl chloride	-	-	-	-	-	-	-	-
1330-20-7	Xylenes	-	-	-	-	-	-	-	-
108-38-3	Xylenes, m-	-	-	-	-	-	-	-	-
95-47-6	Xylenes, o-	-	-	-	-	-	-	-	-
106-42-3	Xylenes, p-	-	-	-	-	-	-	-	-
13530-65-9	Zinc chromate	-	-	-	-	-	-	-	-

RASS version: 2020-12

No inputs needed on this page

Air Concentrations in ug/m3

		Stack #40				Stack #41			
CAS# or MPCA#	**Chemical Name**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**
202-94-8	11H-Benz[b,c]aceanthrylene	-	-	-	-	-	-	-	-
202-98-2	4H-Cyclopenta[d,e,f]chrysen	-	-	-	-	-	-	-	-
75-07-0	Acetaldehyde	-	-	-	-	-	-	-	-
60-35-5	Acetamide	-	-	-	-	-	-	-	-
67-64-1	Acetone	-	-	-	-	-	-	-	-
75-86-5	Acetone Cyanohydrin	-	-	-	-	-	-	-	-
75-05-8	Acetonitrile	-	-	-	-	-	-	-	-
53-96-3	Acetylaminofluorene, 2-	-	-	-	-	-	-	-	-
107-02-8	Acrolein	-	-	-	-	-	-	-	-
79-06-1	Acrylamide	-	-	-	-	-	-	-	-
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-	-	-	-	-	-	-	-	-
79-10-7	Acrylic acid	-	-	-	-	-	-	-	-
107-13-1	Acrylonitrile	-	-	-	-	-	-	-	-
111-69-3	Adiponitrile	-	-	-	-	-	-	-	-
ALDEHYDES	Aldehydes	-	-	-	-	-	-	-	-
309-00-2	Aldrin	-	-	-	-	-	-	-	-
ALIPHATIC-M	Aliphatic Hydrocarbon Strea	-	-	-	-	-	-	-	-
107-05-1	Allyl chloride	-	-	-	-	-	-	-	-
7429-90-5	Aluminum	-	-	-	-	-	-	-	-
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3	-	-	-	-	-	-	-	-
6109-97-3	Amino-9-ethylcarbazolehydr	-	-	-	-	-	-	-	-
117-79-3	Aminoanthraquinone, 2-	-	-	-	-	-	-	-	-
7664-41-7	Ammonia	-	-	-	-	-	-	-	-
62-53-3	Aniline	-	-	-	-	-	-	-	-
191-26-4	Anthanthrene	-	-	-	-	-	-	-	-
7440-36-0	Antimony	-	-	-	-	-	-	-	-
ANTIMONY-C	Antimony Compounds	-	-	-	-	-	-	-	-
1309-64-4	Antimony trioxide	-	-	-	-	-	-	-	-
140-57-8	Aramite	-	-	-	-	-	-	-	-
7440-38-2	Arsenic	-	-	-	-	0.00	0.00	0.00	0.00
ARSENIC-CO	Arsenic Compounds	-	-	-	-	-	-	-	-
1327-53-3	Arsenic Trioxide	-	-	-	-	-	-	-	-
7784-42-1	Arsine	-	-	-	-	-	-	-	-
1332-21-4	Asbestos (units in fibers)	-	-	-	-	-	-	-	-
1332-21-4-LA	Asbestos, Libby Amphibole	-	-	-	-	-	-	-	-
123-77-3	Azodicarbonamide	-	-	-	-	-	-	-	-
10294-40-3	Barium Chromate	-	-	-	-	-	-	-	-
199-54-2	Benz[e]aceanthrylene	-	-	-	-	-	-	-	-
202-33-5	Benz[j]aceanthrylene	-	-	-	-	-	-	-	-
211-91-6	Benz[l]aceanthrylene	-	-	-	-	-	-	-	-
71-43-2	Benzene	-	-	-	-	0.00	0.00	0.00	0.00
92-87-5	Benzidine	-	-	-	-	-	-	-	-
205-82-3	Benzo(j)fluoranthene	-	-	-	-	-	-	-	-
207-08-9	Benzo(k)fluoranthene	-	-	-	-	-	-	-	-
56-55-3	Benzo[a]anthracene	-	-	-	-	-	-	-	-
50-32-8	Benzo[a]pyrene	-	-	-	-	-	-	-	-
205-99-2	Benzo[b]fluoranthene	-	-	-	-	-	-	-	-
205-12-9	Benzo[c]fluorene	-	-	-	-	-	-	-	-
191-24-2	Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-
65-85-0	Benzoic Acid	-	-	-	-	-	-	-	-
100-44-7	Benzyl chloride	-	-	-	-	-	-	-	-
7440-41-7	Beryllium	-	-	-	-	0.00	0.00	0.00	0.00
BERYLLIUM-	Beryllium Compounds	-	-	-	-	-	-	-	-
13510-49-1	Beryllium sulfate	-	-	-	-	-	-	-	-
111-44-4	Bis(2-chloroethyl)ether	-	-	-	-	-	-	-	-
117-81-7	Bis(2-ethylhexyl)phthalate (	-	-	-	-	-	-	-	-
542-88-1	Bis(chloromethyl)ether	-	-	-	-	-	-	-	-
7440-42-8	Boron And Borates Only	-	-	-	-	-	-	-	-
10294-34-5	Boron Trichloride	-	-	-	-	-	-	-	-
7637-07-2	Boron Trifluoride	-	-	-	-	-	-	-	-
108-86-1	Bromobenzene	-	-	-	-	-	-	-	-
74-97-5	Bromochloromethane	-	-	-	-	-	-	-	-
75-27-4	Bromodichloromethane	-	-	-	-	-	-	-	-
75-25-2	Bromoform	-	-	-	-	-	-	-	-
74-83-9	Bromomethane	-	-	-	-	-	-	-	-
106-94-5	Bromopropane, 1-	-	-	-	-	-	-	-	-
106-99-0	Butadiene, 1,3-	-	-	-	-	-	-	-	-
78-92-2	Butyl alcohol, sec-	-	-	-	-	-	-	-	-
111-76-2	Butyl Cellosolve (ethylene g	-	-	-	-	-	-	-	-
25013-16-5	Butylated hydroxyanisole	-	-	-	-	-	-	-	-
3068-88-0	Butyrolactone, beta-	-	-	-	-	-	-	-	-
7440-43-9	Cadmium	-	-	-	-	0.00	0.00	0.00	0.00
CADMIUM-CO	Cadmium Compounds	-	-	-	-	-	-	-	-
13765-19-0	Calcium Chromate	-	-	-	-	-	-	-	-
105-60-2	Caprolactum	-	-	-	-	-	-	-	-
75-15-0	Carbon disulfide	-	-	-	-	-	-	-	-
630-08-0	Carbon Monoxide	-	-	-	-	10.03	4.20	1.05	0.57
56-23-5	Carbon tetrachloride	-	-	-	-	-	-	-	-
463-58-1	Carbonyl sulfide	-	-	-	-	-	-	-	-
111-15-9	Cellosolve Acetate (ethylen	-	-	-	-	-	-	-	-
1306-38-3	Cerium Oxide and Cerium C	-	-	-	-	-	-	-	-
12789-03-6	Chlordane or (57-74-9)	-	-	-	-	-	-	-	-
115-28-6	Chlorendic acid	-	-	-	-	-	-	-	-
108171-26-2	Chlorinated Paraffins (C12,	-	-	-	-	-	-	-	-
7782-50-5	Chlorine	-	-	-	-	-	-	-	-

10049-04-4	Chlorine Oxide (CLO2)	-	-	-	-	-	-	-	-
75-68-3	Chloro-1,1-difluoroethane, 1	-	-	-	-	-	-	-	-
563-47-3	Chloro-2-methylpropene, 3-	-	-	-	-	-	-	-	-
95-83-0	Chloro-o-phenylenediamine	-	-	-	-	-	-	-	-
95-69-2	Chloro-o-toluidine, p-	-	-	-	-	-	-	-	-
532-27-4	Chloroacetophenone, 2-	-	-	-	-	-	-	-	-
108-90-7	Chlorobenzene	-	-	-	-	-	-	-	-
98-56-6	Chlorobenzotrifluoride, 4-	-	-	-	-	-	-	-	-
75-45-6	Chlorodifluoromethane (HC	-	-	-	-	-	-	-	-
67-66-3	Chloroform	-	-	-	-	-	-	-	-
107-30-2	Chloromethyl Methyl Ether	-	-	-	-	-	-	-	-
88-73-3	Chloronitrobenzene, o-	-	-	-	-	-	-	-	-
100-00-5	Chloronitrobenzene, p-	-	-	-	-	-	-	-	-
76-06-2	Chloropicrin	-	-	-	-	-	-	-	-
126-99-8	Chloroprene	-	-	-	-	-	-	-	-
1333-82-0	Chromic acid mists and diss	-	-	-	-	-	-	-	-
7440-47-3	Chromium	-	-	-	-	-	-	-	-
18540-29-9	Chromium (Hexavalent)	-	-	-	-	0.00	0.00	0.00	0.00
18540-29-9-p	Chromium (Hexavalent) - P	-	-	-	-	-	-	-	-
CHROM-COM	Chromium Compounds	-	-	-	-	-	-	-	-
16065-83-1	Chromium(III) Compounds	-	-	-	-	0.00	0.00	0.00	0.00
218-01-9	Chrysene (Benzo(a)phenan	-	-	-	-	-	-	-	-
87-29-6	Cinnamyl anthranilate	-	-	-	-	-	-	-	-
10061-01-5	cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-
8007-45-2	Coal Tar	-	-	-	-	-	-	-	-
7440-48-4	Cobalt	-	-	-	-	0.00	0.00	0.00	0.00
0-00-7	Coke Oven Emissions	-	-	-	-	-	-	-	-
7440-50-8	Copper	-	-	-	-	-	-	-	-
COPPER-CO	Copper Compounds	-	-	-	-	-	-	-	-
120-71-8	Cresidine, p-	-	-	-	-	-	-	-	-
108-39-4	Cresol, m-	-	-	-	-	-	-	-	-
95-48-7	Cresol, o-	-	-	-	-	-	-	-	-
106-44-5	Cresol, p-	-	-	-	-	-	-	-	-
1319-77-3	Cresols/Cresylic acid (isome	-	-	-	-	-	-	-	-
98-82-8	Cumene	-	-	-	-	-	-	-	-
135-20-6	Cupferron	-	-	-	-	-	-	-	-
57-12-5	Cyanide (Cyanide ion, Inorg	-	-	-	-	-	-	-	-
CYANIDE-CO	Cyanide Compounds	-	-	-	-	-	-	-	-
110-82-7	Cyclohexane	-	-	-	-	-	-	-	-
108-94-1	Cyclohexanone	-	-	-	-	-	-	-	-
27208-37-3	Cyclopenta[c,d]pyrene	-	-	-	-	-	-	-	-
50-29-3	DDT	-	-	-	-	-	-	-	-
615-05-4	Diaminoanisole, 2,4-	-	-	-	-	-	-	-	-
101-80-4	Diaminodiphenyl ether, 4,4-	-	-	-	-	-	-	-	-
103-33-3	Diazene, Diphenyl	-	-	-	-	-	-	-	-
226-36-8	Dibenz(a,h)acridine	-	-	-	-	-	-	-	-
224-42-0	Dibenz(a,j)acridine	-	-	-	-	-	-	-	-
53-70-3	Dibenz[a,h]anthracene	-	-	-	-	-	-	-	-
192-65-4	Dibenzo(a,e)pyrene	-	-	-	-	-	-	-	-
189-64-0	Dibenzo(a,h)pyrene	-	-	-	-	-	-	-	-
191-30-0	Dibenzo(a,l)pyrene	-	-	-	-	-	-	-	-
194-59-2	Dibenzo(c,g)carbazole, 7H-	-	-	-	-	-	-	-	-
5385-75-1	Dibenzo[a,e]fluoranthene	-	-	-	-	-	-	-	-
189-55-9	Dibenzo[a,i]pyrene	-	-	-	-	-	-	-	-
96-12-8	Dibromo-3-chloropropane, 1	-	-	-	-	-	-	-	-
764-41-0	Dichloro-2-butene, 1,4-	-	-	-	-	-	-	-	-
1476-11-5	Dichloro-2-butene, cis-1,4-	-	-	-	-	-	-	-	-
106-46-7	Dichlorobenzene(p), 1,4-	-	-	-	-	-	-	-	-
25321-22-6	Dichlorobenzenes	-	-	-	-	0.00	0.00	0.00	0.00
91-94-1	Dichlorobenzidene, 3,3-	-	-	-	-	-	-	-	-
75-71-8	Dichlorodifluoromethane (C	-	-	-	-	-	-	-	-
75-35-4	Dichloroethylene (1,1-) (Vin	-	-	-	-	-	-	-	-
156-60-5	Dichloroethylene, trans-1,2-	0.10	0.03	0.01	0.01	0.09	0.04	0.01	0.01
542-75-6	Dichloropropene, 1,3-	-	-	-	-	-	-	-	-
78-88-6	Dichloropropene, 2,3-	-	-	-	-	-	-	-	-
62-73-7	Dichlorvos	-	-	-	-	-	-	-	-
77-73-6	Dicyclopentadiene	-	-	-	-	-	-	-	-
60-57-1	Dieldrin	-	-	-	-	-	-	-	-
0-02-4	Diesel exhaust particulate	-	-	-	-	-	-	-	-
111-42-2	Diethanolamine	-	-	-	-	-	-	-	-
112-34-5	Diethylene Glycol Monobuty	-	-	-	-	-	-	-	-
111-90-0	Diethylene Glycol Monoethy	-	-	-	-	-	-	-	-
75-37-6	Difluoroethane, 1,1-	-	-	-	-	-	-	-	-
108-20-3	Diisopropyl Ether	-	-	-	-	-	-	-	-
60-11-7	Dimethyl aminoazobenzene	-	-	-	-	-	-	-	-
68-12-2	Dimethyl formamide	-	-	-	-	-	-	-	-
108-01-0	Dimethylamino ethanol, 2-	-	-	-	-	-	-	-	-
57-97-6	Dimethylbenz[a]anthracene,	-	-	-	-	-	-	-	-
57-14-7	Dimethylhydrazine, 1,1-	-	-	-	-	-	-	-	-
42397-64-8	Dinitropyrene, 1,6- (BaP)	-	-	-	-	-	-	-	-
42397-65-9	Dinitropyrene, 1,8- (BaP)	-	-	-	-	-	-	-	-
121-14-2	Dinitrotoluene, 2,4-	-	-	-	-	-	-	-	-
123-91-1	Dioxane, 1,4- (1,4-Diethylen	-	-	-	-	-	-	-	-
122-66-7	Diphenylhydrazine, 1,2-	-	-	-	-	-	-	-	-
106-89-8	Epichlorohydrin (l-Chloro-2,	-	-	-	-	-	-	-	-
106-88-7	Epoxybutane, 1,2-	-	-	-	-	-	-	-	-
110-80-5	Ethoxyethanol, 2- (ethylene	-	-	-	-	-	-	-	-
141-78-6	Ethyl acetate	-	-	-	-	-	-	-	-
140-88-5	Ethyl Acrylate	-	-	-	-	-	-	-	-
100-41-4	Ethyl benzene	-	-	-	-	-	-	-	-
51-79-6	Ethyl carbamate (Urethane)	-	-	-	-	-	-	-	-

75-00-3	Ethyl chloride (Chloroethane	-	-	-	-	-	-	-	-
97-63-2	Ethyl Methacrylate	-	-	-	-	-	-	-	-
106-93-4	Ethylene dibromide (Dibrom	-	-	-	-	-	-	-	-
107-06-2	Ethylene dichloride (1,2-Dic	-	-	-	-	-	-	-	-
107-21-1	Ethylene glycol	-	-	-	-	-	-	-	-
75-21-8	Ethylene oxide	-	-	-	-	-	-	-	-
96-45-7	Ethylene thiourea	-	-	-	-	-	-	-	-
75-34-3	Ethylidene dichloride (1,1-D	-	-	-	-	-	-	-	-
206-44-0	Fluoranthene	-	-	-	-	-	-	-	-
FLUORIDES	Fluorides (except hydrogen	-	-	-	-	-	-	-	-
50-00-0	Formaldehyde	-	-	-	-	0.01	0.00	0.00	0.00
64-18-6	Formic Acid	-	-	-	-	-	-	-	-
111-30-8	Glutaraldehyde	-	-	-	-	-	-	-	-
0-01-2	Glycol ethers	-	-	-	-	-	-	-	-
76-44-8	Heptachlor	-	-	-	-	-	-	-	-
1024-57-3	Heptachlor epoxide	-	-	-	-	-	-	-	-
35822-46-9	Heptachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-5	Heptachlorodibenzodioxin,	-	-	-	-	-	-	-	-
67562-39-4	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
55673-89-7	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
00-08-4	Heptachlorodibenzofuran, A	-	-	-	-	-	-	-	-
142-82-5	Heptane, N	-	-	-	-	-	-	-	-
118-74-1	Hexachlorobenzene	-	-	-	-	-	-	-	-
87-68-3	Hexachlorobutadiene	-	-	-	-	-	-	-	-
608-73-1	Hexachlorocyclohexane (tec	-	-	-	-	-	-	-	-
319-84-6	Hexachlorocyclohexane, alp	-	-	-	-	-	-	-	-
319-85-7	Hexachlorocyclohexane, be	-	-	-	-	-	-	-	-
77-47-4	Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-
39227-28-6	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
57653-85-7	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
19408-74-3	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-3	Hexachlorodibenzodioxins,	-	-	-	-	-	-	-	-
70648-26-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
57117-44-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
72918-21-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
60851-34-5	Hexachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-
00-08-2	Hexachlorodibenzofurans, A	-	-	-	-	-	-	-	-
67-72-1	Hexachloroethane	-	-	-	-	-	-	-	-
822-06-0	Hexamethylene-1,6-diisocya	-	-	-	-	-	-	-	-
110-54-3	Hexane	-	-	-	-	0.21	0.09	0.02	0.01
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl	-	-	-	-	-	-	-	-
591-78-6	Hexanone-2	-	-	-	-	-	-	-	-
302-01-2	Hydrazine	-	-	-	-	-	-	-	-
10034-93-2	Hydrazine sulfate	-	-	-	-	-	-	-	-
7647-01-0	Hydrochloric acid (hydrogen	-	-	-	-	-	-	-	-
74-90-8	Hydrogen cyanide	-	-	-	-	-	-	-	-
7664-39-3	Hydrogen fluoride (Hydroflu	-	-	-	-	-	-	-	-
7783-07-5	Hydrogen selenide	-	-	-	-	-	-	-	-
7783-06-4	Hydrogen sulfide	-	-	-	-	-	-	-	-
193-39-5	Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-
5888-33-5	Isobornyl acrylate	-	-	-	-	-	-	-	-
78-59-1	Isophorone	-	-	-	-	-	-	-	-
67-63-0	Isopropyl alcohol	-	-	-	-	-	-	-	-
7439-92-1	Lead	-	-	-	-	-	-	-	-
7758-97-6	Lead Chromate	-	-	-	-	-	-	-	-
LEAD-COMP	Lead Compounds	-	-	-	-	-	-	-	-
58-89-9	Lindane (all isomers)	-	-	-	-	-	-	-	-
108-31-6	Maleic anhydride	-	-	-	-	-	-	-	-
7439-96-5	Manganese	-	-	-	-	0.00	0.00	0.00	0.00
MANGANESE	Manganese Compounds	-	-	-	-	-	-	-	-
7439-97-6	Mercury (elemental)	-	-	-	-	0.00	0.00	0.00	0.00
MERCURY-C	Mercury Compounds	-	-	-	-	-	-	-	-
126-98-7	Methacrylonitrile	-	-	-	-	-	-	-	-
67-56-1	Methanol	-	-	-	-	-	-	-	-
109-86-4	Methoxyethanol, 2- (ethylen	-	-	-	-	-	-	-	-
96-33-3	Methyl acrylate	-	-	-	-	-	-	-	-
110-49-6	Methyl Cellosolve Acetate	-	-	-	-	-	-	-	-
74-87-3	Methyl chloride (Chlorometh	-	-	-	-	-	-	-	-
71-55-6	Methyl chloroform (1,1,1-Tri	-	-	-	-	-	-	-	-
78-93-3	Methyl ethyl ketone (2-Buta	-	-	-	-	-	-	-	-
60-34-4	Methyl Hydrazine	-	-	-	-	-	-	-	-
108-10-1	Methyl isobutyl ketone (Hex	-	-	-	-	-	-	-	-
624-83-9	Methyl isocyanate	-	-	-	-	-	-	-	-
80-62-6	Methyl methacrylate	-	-	-	-	-	-	-	-
1634-04-4	Methyl tert butyl ether	-	-	-	-	-	-	-	-
56-49-5	Methylcholanthrene, 3-	-	-	-	-	-	-	-	-
3697-24-3	Methylchrysene, 5-	-	-	-	-	-	-	-	-
101-14-4	Methylene bis(2-chloroanilin	-	-	-	-	-	-	-	-
74-95-3	Methylene Bromide	-	-	-	-	-	-	-	-
75-09-2	Methylene chloride (Dichlor	-	-	-	-	-	-	-	-
101-68-8	Methylene diphenyl diisocya	-	-	-	-	-	-	-	-
101-77-9	Methylenedianiline, 4,4-	-	-	-	-	-	-	-	-
90-94-8	Michler's ketone	-	-	-	-	-	-	-	-
10595-95-6	N- Nitrosomethylethylamine	-	-	-	-	-	-	-	-
924-16-3	N-Nitrosodi-n-butylamine	-	-	-	-	-	-	-	-
621-64-7	N-Nitrosodi-n-propylamine	-	-	-	-	-	-	-	-
55-18-5	N-Nitrosodiethylamine	-	-	-	-	-	-	-	-
62-75-9	N-Nitrosodimethylamine	-	-	-	-	-	-	-	-
86-30-6	N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-
59-89-2	N-Nitrosomorpholine	-	-	-	-	-	-	-	-
100-75-4	N-Nitrosopiperidine	-	-	-	-	-	-	-	-

111-84-2	N-Nonane	-	-	-	-	-	-	-	-
64724-95-6	Naphtha, High Flash Aroma	-	-	-	-	-	-	-	-
91-20-3	Naphthalene	-	-	-	-	0.00	0.00	0.00	0.00
193-09-9	Naphtho[2,3-e]pyrene	-	-	-	-	-	-	-	-
7440-02-0	Nickel	-	-	-	-	0.00	0.00	0.00	0.00
NICKEL-COM	Nickel Compounds	-	-	-	-	-	-	-	-
1313-99-1	Nickel oxide	-	-	-	-	-	-	-	-
0-02-5	Nickel refinery dust from the	-	-	-	-	-	-	-	-
12035-72-2	Nickel sulfide (NI3S2)	-	-	-	-	-	-	-	-
7697-37-2	Nitric acid	-	-	-	-	-	-	-	-
139-13-9	Nitrilotriacetic acid	-	-	-	-	-	-	-	-
18662-53-8	Nitrilotriacetic acid, trisodiu	-	-	-	-	-	-	-	-
602-87-9	Nitroacenaphthene, 5-	-	-	-	-	-	-	-	-
88-74-4	Nitroaniline, 2-	-	-	-	-	-	-	-	-
100-01-6	Nitroaniline, 4-	-	-	-	-	-	-	-	-
98-95-3	Nitrobenzene	-	-	-	-	-	-	-	-
7496-02-8	Nitrochrysene, 6-	-	-	-	-	-	-	-	-
607-57-8	Nitrofluorene, 2-	-	-	-	-	-	-	-	-
10102-44-0	Nitrogen dioxide (NO2)	-	-	-	-	11.94	5.00	1.25	0.68
75-52-5	Nitromethane	-	-	-	-	-	-	-	-
79-46-9	Nitropropane, 2-	-	-	-	-	-	-	-	-
5522-43-0	Nitropyrene, 1-	-	-	-	-	-	-	-	-
57835-92-4	Nitropyrene, 4-	-	-	-	-	-	-	-	-
156-10-5	Nitrosodiphenylamine, p-	-	-	-	-	-	-	-	-
3268-87-9	Octachlorodibenzo-p-dioxin,	-	-	-	-	-	-	-	-
39001-02-0	Octachlorodibenzofuran, 1,2	-	-	-	-	-	-	-	-
10028-15-6	Ozone	-	-	-	-	-	-	-	-
74472-37-0	PCB 114 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
31508-00-6	PCB 118 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
65510-44-3	PCB 123 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
57465-28-8	PCB 126 (3,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
38380-0804	PCB 156 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Hep	-	-	-	-	-	-	-	-
32598-13-3	PCB 77 (3,3,4,4-Tetrachloro	-	-	-	-	-	-	-	-
70362-50-4	PCB 81 (3,4,4,5 Tetrachloro	-	-	-	-	-	-	-	-
32598-14-4	PCB105 (2,3,3,4,4 Pentachl	-	-	-	-	-	-	-	-
40321-76-4	Pentachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-1	Pentachlorodibenzodioxins,	-	-	-	-	-	-	-	-
57117-41-6	Pentachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
57117-31-4	Pentachlorodibenzofuran, 2	-	-	-	-	-	-	-	-
00-09-0	Pentachlorodibenzofurans,	-	-	-	-	-	-	-	-
87-86-5	Pentachlorophenol	-	-	-	-	-	-	-	-
109-66-0	Pentane, n-	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
85-01-8	Phenanthrene	-	-	-	-	-	-	-	-
108-95-2	Phenol	-	-	-	-	-	-	-	-
75-44-5	Phosgene	-	-	-	-	-	-	-	-
7803-51-2	Phosphine	-	-	-	-	-	-	-	-
7664-38-2	Phosphoric acid	-	-	-	-	-	-	-	-
85-44-9	Phthalic anhydride	-	-	-	-	-	-	-	-
59536-65-1	Polybrominated Biphenyls	-	-	-	-	-	-	-	-
1336-36-3	Polychlorinated biphenyls (A	-	-	-	-	-	-	-	-
00-08-0	Polychlorinated Dibenzo-P-	-	-	-	-	-	-	-	-
00-05-0	Polychlorinated Dibenzodio	-	-	-	-	-	-	-	-
00-05-1	Polychlorinated Dibenzofura	-	-	-	-	-	-	-	-
130498-29-2	Polycyclic Aromatic Hydroca	-	-	-	-	-	-	-	-
00-01-7	Polycyclic Organic Matter (P	-	-	-	-	0.00	0.00	0.00	0.00
9016-87-9	Polymeric diphenylmethane	-	-	-	-	-	-	-	-
7758-01-2	Potassium bromate	-	-	-	-	-	-	-	-
1120-71-4	Propane sultone, 1,3-	-	-	-	-	-	-	-	-
57-57-8	Propiolactone, beta-	-	-	-	-	-	-	-	-
123-38-6	Propionaldehyde	-	-	-	-	-	-	-	-
115-07-1	Propylene	-	-	-	-	-	-	-	-
78-87-5	Propylene dichloride (1,2-Di	-	-	-	-	-	-	-	-
107-98-2	Propylene Glycol Monometh	-	-	-	-	-	-	-	-
75-56-9	Propylene oxide	-	-	-	-	-	-	-	-
930-55-2	Pyrrolidine, 1-Nitroso-	-	-	-	-	-	-	-	-
7782-49-2	Selenium	-	-	-	-	0.00	0.00	0.00	0.00
0-01-9	Selenium Compounds	-	-	-	-	-	-	-	-
7631-86-9	Silica (crystalline, respirable	-	-	-	-	-	-	-	-
1310-73-2	Sodium hydroxide	-	-	-	-	-	-	-	-
10588-01-9	Sodium Dichromate	-	-	-	-	-	-	-	-
7789-06-2	Strontium chromate	-	-	-	-	-	-	-	-
100-42-5	Styrene	-	-	-	-	-	-	-	-
96-09-3	Styrene oxide	-	-	-	-	-	-	-	-
14808-79-8	Sulfates	-	-	-	-	-	-	-	-
126-33-0	Sulfolane	-	-	-	-	-	-	-	-
7446-09-5	Sulfur dioxide	-	-	-	-	0.07	0.03	0.01	0.00
7664-93-9	Sulfuric acid (aerosol forms	-	-	-	-	-	-	-	-
8014-95-7	Sulfuric Acid mixture w. sulf	-	-	-	-	-	-	-	-
00-09-1	TCDD Eqivalents, 2,3,7,8-	-	-	-	-	-	-	-	-
540-88-5	Tert-Butyl Acetate	-	-	-	-	-	-	-	-
1746-01-6	Tetrachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-8	Tetrachlorodibenzodioxins,	-	-	-	-	-	-	-	-
51207-31-9	Tetrachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-

00-08-6	Tetrachlorodibenzofurans, A	-	-	-	-	-	-	-	-
630-20-6	Tetrachloroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
79-34-5	Tetrachloroethane, 1,1,2,2-	-	-	-	-	-	-	-	-
127-18-4	Tetrachloroethylene (Perchl	-	-	-	-	-	-	-	-
811-97-2	Tetrafluoroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
109-99-9	Tetrahydrofuran	-	-	-	-	-	-	-	-
62-55-5	Thioacetamide	-	-	-	-	-	-	-	-
62-56-6	Thiourea	-	-	-	-	-	-	-	-
108-88-3	Toluene	-	-	-	-	0.00	0.00	0.00	0.00
584-84-9	Toluene-2,4-diisocyanate	-	-	-	-	-	-	-	-
91-08-7	Toluene-2,6-diisocyanate	-	-	-	-	-	-	-	-
95-80-7	Toluene diamine, 2,4-	-	-	-	-	-	-	-	-
26471-62-5	Toluenediisocyanate (mixed	-	-	-	-	-	-	-	-
95-53-4	Toluidine, o- (Methylaniline,	-	-	-	-	-	-	-	-
8001-35-2	Toxaphene (chlorinated ca	-	-	-	-	-	-	-	-
10061-02-6	trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-
120-82-1	Trichlorobenzene, 1,2,4-	-	-	-	-	-	-	-	-
79-00-5	Trichloroethane, 1,1,2-	-	-	-	-	-	-	-	-
79-01-6	Trichloroethylene (TCE)	-	-	-	-	-	-	-	-
75-69-4	Trichlorofluoromethane (CF	-	-	-	-	-	-	-	-
88-06-2	Trichlorophenol, 2,4,6-	-	-	-	-	-	-	-	-
96-18-4	Trichloropropane, 1,2,3-	-	-	-	-	-	-	-	-
96-19-5	Trichloropropene, 1,2,3-	-	-	-	-	-	-	-	-
76-13-1	Trichlorotrifluoroethane, 1,1	-	-	-	-	-	-	-	-
121-44-8	Triethylamine	-	-	-	-	-	-	-	-
420-46-2	Trifluoroethane, 1,1,1-	-	-	-	-	-	-	-	-
526-73-8	Trimethylbenzene, 1,2,3-	-	-	-	-	-	-	-	-
95-63-6	Trimethylbenzene, 1,2,4-	-	-	-	-	-	-	-	-
108-67-8	Trimethylbenzene, 1,3,5-	-	-	-	-	-	-	-	-
URANIUM-SO	Uranium (Soluble Salts)	-	-	-	-	-	-	-	-
7440-61-1	Uranium, Insoluble Compou	-	-	-	-	-	-	-	-
7440-62-2	Vanadium and Compounds	-	-	-	-	-	-	-	-
1314-62-1	Vanadium Pentoxide, (V2O	-	-	-	-	-	-	-	-
108-05-4	Vinyl acetate	-	-	-	-	-	-	-	-
593-60-2	Vinyl bromide	-	-	-	-	-	-	-	-
75-01-4	Vinyl chloride	-	-	-	-	-	-	-	-
1330-20-7	Xylenes	-	-	-	-	-	-	-	-
108-38-3	Xylenes, m-	-	-	-	-	-	-	-	-
95-47-6	Xylenes, o-	-	-	-	-	-	-	-	-
106-42-3	Xylenes, p-	-	-	-	-	-	-	-	-
13530-65-9	Zinc chromate	-	-	-	-	-	-	-	-

RASS version: 2020-12

No inputs needed on this page

Air Concentrations in ug/m3

		Stack #42				Stack #43			
CAS# or MPCA#	**Chemical Name**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**
202-94-8	11H-Benz[b,c]aceanthrylene	-	-	-	-	-	-	-	-
202-98-2	4H-Cyclopenta[d,e,f]chrysen	-	-	-	-	-	-	-	-
75-07-0	Acetaldehyde	-	-	-	-	-	-	-	-
60-35-5	Acetamide	-	-	-	-	-	-	-	-
67-64-1	Acetone	-	-	-	-	-	-	-	-
75-86-5	Acetone Cyanohydrin	-	-	-	-	-	-	-	-
75-05-8	Acetonitrile	-	-	-	-	-	-	-	-
53-96-3	Acetylaminofluorene, 2-	-	-	-	-	-	-	-	-
107-02-8	Acrolein	-	-	-	-	-	-	-	-
79-06-1	Acrylamide	-	-	-	-	-	-	-	-
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-	-	-	-	-	-	-	-	-
79-10-7	Acrylic acid	-	-	-	-	-	-	-	-
107-13-1	Acrylonitrile	-	-	-	-	-	-	-	-
111-69-3	Adiponitrile	-	-	-	-	-	-	-	-
ALDEHYDES	Aldehydes	-	-	-	-	-	-	-	-
309-00-2	Aldrin	-	-	-	-	-	-	-	-
ALIPHATIC-M	Aliphatic Hydrocarbon Strea	-	-	-	-	-	-	-	-
107-05-1	Allyl chloride	-	-	-	-	-	-	-	-
7429-90-5	Aluminum	-	-	-	-	-	-	-	-
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3	-	-	-	-	-	-	-	-
6109-97-3	Amino-9-ethylcarbazolehydr	-	-	-	-	-	-	-	-
117-79-3	Aminoanthraquinone, 2-	-	-	-	-	-	-	-	-
7664-41-7	Ammonia	-	-	-	-	-	-	-	-
62-53-3	Aniline	-	-	-	-	-	-	-	-
191-26-4	Anthanthrene	-	-	-	-	-	-	-	-
7440-36-0	Antimony	-	-	-	-	-	-	-	-
ANTIMONY-C	Antimony Compounds	-	-	-	-	-	-	-	-
1309-64-4	Antimony trioxide	-	-	-	-	-	-	-	-
140-57-8	Aramite	-	-	-	-	-	-	-	-
7440-38-2	Arsenic	-	-	-	-	0.00	0.00	0.00	0.00
ARSENIC-CO	Arsenic Compounds	-	-	-	-	-	-	-	-
1327-53-3	Arsenic Trioxide	-	-	-	-	-	-	-	-
7784-42-1	Arsine	-	-	-	-	-	-	-	-
1332-21-4	Asbestos (units in fibers)	-	-	-	-	-	-	-	-
1332-21-4-LA	Asbestos, Libby Amphibole	-	-	-	-	-	-	-	-
123-77-3	Azodicarbonamide	-	-	-	-	-	-	-	-
10294-40-3	Barium Chromate	-	-	-	-	-	-	-	-
199-54-2	Benz[e]aceanthrylene	-	-	-	-	-	-	-	-
202-33-5	Benz[j]aceanthrylene	-	-	-	-	-	-	-	-
211-91-6	Benz[l]aceanthrylene	-	-	-	-	-	-	-	-
71-43-2	Benzene	-	-	-	-	0.00	0.00	0.00	0.00
92-87-5	Benzidine	-	-	-	-	-	-	-	-
205-82-3	Benzo(j)fluoranthene	-	-	-	-	-	-	-	-
207-08-9	Benzo(k)fluoranthene	-	-	-	-	-	-	-	-
56-55-3	Benzo[a]anthracene	-	-	-	-	-	-	-	-
50-32-8	Benzo[a]pyrene	-	-	-	-	-	-	-	-
205-99-2	Benzo[b]fluoranthene	-	-	-	-	-	-	-	-
205-12-9	Benzo[c]fluorene	-	-	-	-	-	-	-	-
191-24-2	Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-
65-85-0	Benzoic Acid	-	-	-	-	-	-	-	-
100-44-7	Benzyl chloride	-	-	-	-	-	-	-	-
7440-41-7	Beryllium	-	-	-	-	0.00	0.00	0.00	0.00
BERYLLIUM-	Beryllium Compounds	-	-	-	-	-	-	-	-
13510-49-1	Beryllium sulfate	-	-	-	-	-	-	-	-
111-44-4	Bis(2-chloroethyl)ether	-	-	-	-	-	-	-	-
117-81-7	Bis(2-ethylhexyl)phthalate (	-	-	-	-	-	-	-	-
542-88-1	Bis(chloromethyl)ether	-	-	-	-	-	-	-	-
7440-42-8	Boron And Borates Only	-	-	-	-	-	-	-	-
10294-34-5	Boron Trichloride	-	-	-	-	-	-	-	-
7637-07-2	Boron Trifluoride	-	-	-	-	-	-	-	-
108-86-1	Bromobenzene	-	-	-	-	-	-	-	-
74-97-5	Bromochloromethane	-	-	-	-	-	-	-	-
75-27-4	Bromodichloromethane	-	-	-	-	-	-	-	-
75-25-2	Bromoform	-	-	-	-	-	-	-	-
74-83-9	Bromomethane	-	-	-	-	-	-	-	-
106-94-5	Bromopropane, 1-	-	-	-	-	-	-	-	-
106-99-0	Butadiene, 1,3-	-	-	-	-	-	-	-	-
78-92-2	Butyl alcohol, sec-	-	-	-	-	-	-	-	-
111-76-2	Butyl Cellosolve (ethylene g	-	-	-	-	-	-	-	-
25013-16-5	Butylated hydroxyanisole	-	-	-	-	-	-	-	-
3068-88-0	Butyrolactone, beta-	-	-	-	-	-	-	-	-
7440-43-9	Cadmium	-	-	-	-	0.00	0.00	0.00	0.00
CADMIUM-CO	Cadmium Compounds	-	-	-	-	-	-	-	-
13765-19-0	Calcium Chromate	-	-	-	-	-	-	-	-
105-60-2	Caprolactum	-	-	-	-	-	-	-	-
75-15-0	Carbon disulfide	-	-	-	-	-	-	-	-
630-08-0	Carbon Monoxide	-	-	-	-	63.60	19.52	7.50	5.57
56-23-5	Carbon tetrachloride	-	-	-	-	-	-	-	-
463-58-1	Carbonyl sulfide	-	-	-	-	-	-	-	-
111-15-9	Cellosolve Acetate (ethylen	-	-	-	-	-	-	-	-
1306-38-3	Cerium Oxide and Cerium C	-	-	-	-	-	-	-	-
12789-03-6	Chlordane or (57-74-9)	-	-	-	-	-	-	-	-
115-28-6	Chlorendic acid	-	-	-	-	-	-	-	-
108171-26-2	Chlorinated Paraffins (C12,	-	-	-	-	-	-	-	-
7782-50-5	Chlorine	-	-	-	-	-	-	-	-

10049-04-4	Chlorine Oxide (CLO2)	-	-	-	-	-	-	-	-
75-68-3	Chloro-1,1-difluoroethane, 1	-	-	-	-	-	-	-	-
563-47-3	Chloro-2-methylpropene, 3-	-	-	-	-	-	-	-	-
95-83-0	Chloro-o-phenylenediamine	-	-	-	-	-	-	-	-
95-69-2	Chloro-o-toluidine, p-	-	-	-	-	-	-	-	-
532-27-4	Chloroacetophenone, 2-	-	-	-	-	-	-	-	-
108-90-7	Chlorobenzene	-	-	-	-	-	-	-	-
98-56-6	Chlorobenzotrifluoride, 4-	-	-	-	-	-	-	-	-
75-45-6	Chlorodifluoromethane (HC	-	-	-	-	-	-	-	-
67-66-3	Chloroform	-	-	-	-	-	-	-	-
107-30-2	Chloromethyl Methyl Ether	-	-	-	-	-	-	-	-
88-73-3	Chloronitrobenzene, o-	-	-	-	-	-	-	-	-
100-00-5	Chloronitrobenzene, p-	-	-	-	-	-	-	-	-
76-06-2	Chloropicrin	-	-	-	-	-	-	-	-
126-99-8	Chloroprene	-	-	-	-	-	-	-	-
1333-82-0	Chromic acid mists and diss	-	-	-	-	-	-	-	-
7440-47-3	Chromium	-	-	-	-	-	-	-	-
18540-29-9	Chromium (Hexavalent)	-	-	-	-	0.00	0.00	0.00	0.00
18540-29-9-p	Chromium (Hexavalent) - P	-	-	-	-	-	-	-	-
CHROM-COM	Chromium Compounds	-	-	-	-	-	-	-	-
16065-83-1	Chromium(III) Compounds	-	-	-	-	0.00	0.00	0.00	0.00
218-01-9	Chrysene (Benzo(a)phenan	-	-	-	-	-	-	-	-
87-29-6	Cinnamyl anthranilate	-	-	-	-	-	-	-	-
10061-01-5	cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-
8007-45-2	Coal Tar	-	-	-	-	-	-	-	-
7440-48-4	Cobalt	-	-	-	-	0.00	0.00	0.00	0.00
0-00-7	Coke Oven Emissions	-	-	-	-	-	-	-	-
7440-50-8	Copper	-	-	-	-	-	-	-	-
COPPER-CO	Copper Compounds	-	-	-	-	-	-	-	-
120-71-8	Cresidine, p-	-	-	-	-	-	-	-	-
108-39-4	Cresol, m-	-	-	-	-	-	-	-	-
95-48-7	Cresol, o-	-	-	-	-	-	-	-	-
106-44-5	Cresol, p-	-	-	-	-	-	-	-	-
1319-77-3	Cresols/Cresylic acid (isome	-	-	-	-	-	-	-	-
98-82-8	Cumene	-	-	-	-	-	-	-	-
135-20-6	Cupferron	-	-	-	-	-	-	-	-
57-12-5	Cyanide (Cyanide ion, Inorg	-	-	-	-	-	-	-	-
CYANIDE-CO	Cyanide Compounds	-	-	-	-	-	-	-	-
110-82-7	Cyclohexane	-	-	-	-	-	-	-	-
108-94-1	Cyclohexanone	-	-	-	-	-	-	-	-
27208-37-3	Cyclopenta[c,d]pyrene	-	-	-	-	-	-	-	-
50-29-3	DDT	-	-	-	-	-	-	-	-
615-05-4	Diaminoanisole, 2,4-	-	-	-	-	-	-	-	-
101-80-4	Diaminodiphenyl ether, 4,4-	-	-	-	-	-	-	-	-
103-33-3	Diazene, Diphenyl	-	-	-	-	-	-	-	-
226-36-8	Dibenz(a,h)acridine	-	-	-	-	-	-	-	-
224-42-0	Dibenz(a,j)acridine	-	-	-	-	-	-	-	-
53-70-3	Dibenz[a,h]anthracene	-	-	-	-	-	-	-	-
192-65-4	Dibenzo(a,e)pyrene	-	-	-	-	-	-	-	-
189-64-0	Dibenzo(a,h)pyrene	-	-	-	-	-	-	-	-
191-30-0	Dibenzo(a,l)pyrene	-	-	-	-	-	-	-	-
194-59-2	Dibenzo(c,g)carbazole, 7H-	-	-	-	-	-	-	-	-
5385-75-1	Dibenzo[a,e]fluoranthene	-	-	-	-	-	-	-	-
189-55-9	Dibenzo[a,i]pyrene	-	-	-	-	-	-	-	-
96-12-8	Dibromo-3-chloropropane, 1	-	-	-	-	-	-	-	-
764-41-0	Dichloro-2-butene, 1,4-	-	-	-	-	-	-	-	-
1476-11-5	Dichloro-2-butene, cis-1,4-	-	-	-	-	-	-	-	-
106-46-7	Dichlorobenzene(p), 1,4-	-	-	-	-	-	-	-	-
25321-22-6	Dichlorobenzenes	-	-	-	-	0.00	0.00	0.00	0.00
91-94-1	Dichlorobenzidene, 3,3-	-	-	-	-	-	-	-	-
75-71-8	Dichlorodifluoromethane (C	-	-	-	-	-	-	-	-
75-35-4	Dichloroethylene (1,1-) (Vin	-	-	-	-	-	-	-	-
156-60-5	Dichloroethylene, trans-1,2-	0.07	0.01	0.00	0.00	-	-	-	-
542-75-6	Dichloropropene, 1,3-	-	-	-	-	-	-	-	-
78-88-6	Dichloropropene, 2,3-	-	-	-	-	-	-	-	-
62-73-7	Dichlorvos	-	-	-	-	-	-	-	-
77-73-6	Dicyclopentadiene	-	-	-	-	-	-	-	-
60-57-1	Dieldrin	-	-	-	-	-	-	-	-
0-02-4	Diesel exhaust particulate	-	-	-	-	-	-	-	-
111-42-2	Diethanolamine	-	-	-	-	-	-	-	-
112-34-5	Diethylene Glycol Monobuty	-	-	-	-	-	-	-	-
111-90-0	Diethylene Glycol Monoethy	-	-	-	-	-	-	-	-
75-37-6	Difluoroethane, 1,1-	-	-	-	-	-	-	-	-
108-20-3	Diisopropyl Ether	-	-	-	-	-	-	-	-
60-11-7	Dimethyl aminoazobenzene	-	-	-	-	-	-	-	-
68-12-2	Dimethyl formamide	-	-	-	-	-	-	-	-
108-01-0	Dimethylamino ethanol, 2-	-	-	-	-	-	-	-	-
57-97-6	Dimethylbenz[a]anthracene,	-	-	-	-	-	-	-	-
57-14-7	Dimethylhydrazine, 1,1-	-	-	-	-	-	-	-	-
42397-64-8	Dinitropyrene, 1,6- (BaP)	-	-	-	-	-	-	-	-
42397-65-9	Dinitropyrene, 1,8- (BaP)	-	-	-	-	-	-	-	-
121-14-2	Dinitrotoluene, 2,4-	-	-	-	-	-	-	-	-
123-91-1	Dioxane, 1,4- (1,4-Diethylen	-	-	-	-	-	-	-	-
122-66-7	Diphenylhydrazine, 1,2-	-	-	-	-	-	-	-	-
106-89-8	Epichlorohydrin (l-Chloro-2,	-	-	-	-	-	-	-	-
106-88-7	Epoxybutane, 1,2-	-	-	-	-	-	-	-	-
110-80-5	Ethoxyethanol, 2- (ethylene	-	-	-	-	-	-	-	-
141-78-6	Ethyl acetate	-	-	-	-	-	-	-	-
140-88-5	Ethyl Acrylate	-	-	-	-	-	-	-	-
100-41-4	Ethyl benzene	-	-	-	-	-	-	-	-
51-79-6	Ethyl carbamate (Urethane)	-	-	-	-	-	-	-	-

75-00-3	Ethyl chloride (Chloroethane	-	-	-	-	-	-	-	-
97-63-2	Ethyl Methacrylate	-	-	-	-	-	-	-	-
106-93-4	Ethylene dibromide (Dibrom	-	-	-	-	-	-	-	-
107-06-2	Ethylene dichloride (1,2-Dic	-	-	-	-	-	-	-	-
107-21-1	Ethylene glycol	-	-	-	-	-	-	-	-
75-21-8	Ethylene oxide	-	-	-	-	-	-	-	-
96-45-7	Ethylene thiourea	-	-	-	-	-	-	-	-
75-34-3	Ethylidene dichloride (1,1-D	-	-	-	-	-	-	-	-
206-44-0	Fluoranthene	-	-	-	-	-	-	-	-
FLUORIDES	Fluorides (except hydrogen	-	-	-	-	-	-	-	-
50-00-0	Formaldehyde	-	-	-	-	0.06	0.02	0.01	0.00
64-18-6	Formic Acid	-	-	-	-	-	-	-	-
111-30-8	Glutaraldehyde	-	-	-	-	-	-	-	-
0-01-2	Glycol ethers	-	-	-	-	-	-	-	-
76-44-8	Heptachlor	-	-	-	-	-	-	-	-
1024-57-3	Heptachlor epoxide	-	-	-	-	-	-	-	-
35822-46-9	Heptachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-5	Heptachlorodibenzodioxin,	-	-	-	-	-	-	-	-
67562-39-4	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
55673-89-7	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
00-08-4	Heptachlorodibenzofuran, A	-	-	-	-	-	-	-	-
142-82-5	Heptane, N	-	-	-	-	-	-	-	-
118-74-1	Hexachlorobenzene	-	-	-	-	-	-	-	-
87-68-3	Hexachlorobutadiene	-	-	-	-	-	-	-	-
608-73-1	Hexachlorocyclohexane (tec	-	-	-	-	-	-	-	-
319-84-6	Hexachlorocyclohexane, alp	-	-	-	-	-	-	-	-
319-85-7	Hexachlorocyclohexane, be	-	-	-	-	-	-	-	-
77-47-4	Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-
39227-28-6	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
57653-85-7	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
19408-74-3	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-3	Hexachlorodibenzodioxins,	-	-	-	-	-	-	-	-
70648-26-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
57117-44-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
72918-21-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
60851-34-5	Hexachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-
00-08-2	Hexachlorodibenzofurans, A	-	-	-	-	-	-	-	-
67-72-1	Hexachloroethane	-	-	-	-	-	-	-	-
822-06-0	Hexamethylene-1,6-diisocya	-	-	-	-	-	-	-	-
110-54-3	Hexane	-	-	-	-	1.36	0.42	0.16	0.12
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl	-	-	-	-	-	-	-	-
591-78-6	Hexanone-2	-	-	-	-	-	-	-	-
302-01-2	Hydrazine	-	-	-	-	-	-	-	-
10034-93-2	Hydrazine sulfate	-	-	-	-	-	-	-	-
7647-01-0	Hydrochloric acid (hydrogen	-	-	-	-	-	-	-	-
74-90-8	Hydrogen cyanide	-	-	-	-	-	-	-	-
7664-39-3	Hydrogen fluoride (Hydroflu	-	-	-	-	-	-	-	-
7783-07-5	Hydrogen selenide	-	-	-	-	-	-	-	-
7783-06-4	Hydrogen sulfide	-	-	-	-	-	-	-	-
193-39-5	Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-
5888-33-5	Isobornyl acrylate	-	-	-	-	-	-	-	-
78-59-1	Isophorone	-	-	-	-	-	-	-	-
67-63-0	Isopropyl alcohol	-	-	-	-	-	-	-	-
7439-92-1	Lead	-	-	-	-	-	-	-	-
7758-97-6	Lead Chromate	-	-	-	-	-	-	-	-
LEAD-COMP	Lead Compounds	-	-	-	-	-	-	-	-
58-89-9	Lindane (all isomers)	-	-	-	-	-	-	-	-
108-31-6	Maleic anhydride	-	-	-	-	-	-	-	-
7439-96-5	Manganese	-	-	-	-	0.00	0.00	0.00	0.00
MANGANESE	Manganese Compounds	-	-	-	-	-	-	-	-
7439-97-6	Mercury (elemental)	-	-	-	-	0.00	0.00	0.00	0.00
MERCURY-C	Mercury Compounds	-	-	-	-	-	-	-	-
126-98-7	Methacrylonitrile	-	-	-	-	-	-	-	-
67-56-1	Methanol	-	-	-	-	-	-	-	-
109-86-4	Methoxyethanol, 2- (ethylen	-	-	-	-	-	-	-	-
96-33-3	Methyl acrylate	-	-	-	-	-	-	-	-
110-49-6	Methyl Cellosolve Acetate	-	-	-	-	-	-	-	-
74-87-3	Methyl chloride (Chlorometh	-	-	-	-	-	-	-	-
71-55-6	Methyl chloroform (1,1,1-Tri	-	-	-	-	-	-	-	-
78-93-3	Methyl ethyl ketone (2-Buta	-	-	-	-	-	-	-	-
60-34-4	Methyl Hydrazine	-	-	-	-	-	-	-	-
108-10-1	Methyl isobutyl ketone (Hex	-	-	-	-	-	-	-	-
624-83-9	Methyl isocyanate	-	-	-	-	-	-	-	-
80-62-6	Methyl methacrylate	-	-	-	-	-	-	-	-
1634-04-4	Methyl tert butyl ether	-	-	-	-	-	-	-	-
56-49-5	Methylcholanthrene, 3-	-	-	-	-	-	-	-	-
3697-24-3	Methylchrysene, 5-	-	-	-	-	-	-	-	-
101-14-4	Methylene bis(2-chloroanilin	-	-	-	-	-	-	-	-
74-95-3	Methylene Bromide	-	-	-	-	-	-	-	-
75-09-2	Methylene chloride (Dichlor	-	-	-	-	-	-	-	-
101-68-8	Methylene diphenyl diisocya	-	-	-	-	-	-	-	-
101-77-9	Methylenedianiline, 4,4-	-	-	-	-	-	-	-	-
90-94-8	Michler's ketone	-	-	-	-	-	-	-	-
10595-95-6	N- Nitrosomethylethylamine	-	-	-	-	-	-	-	-
924-16-3	N-Nitrosodi-n-butylamine	-	-	-	-	-	-	-	-
621-64-7	N-Nitrosodi-n-propylamine	-	-	-	-	-	-	-	-
55-18-5	N-Nitrosodiethylamine	-	-	-	-	-	-	-	-
62-75-9	N-Nitrosodimethylamine	-	-	-	-	-	-	-	-
86-30-6	N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-
59-89-2	N-Nitrosomorpholine	-	-	-	-	-	-	-	-
100-75-4	N-Nitrosopiperidine	-	-	-	-	-	-	-	-

111-84-2	N-Nonane	-	-	-	-	-	-	-	-
64724-95-6	Naphtha, High Flash Aroma	-	-	-	-	-	-	-	-
91-20-3	Naphthalene	-	-	-	-	0.00	0.00	0.00	0.00
193-09-9	Naphtho[2,3-e]pyrene	-	-	-	-	-	-	-	-
7440-02-0	Nickel	-	-	-	-	0.00	0.00	0.00	0.00
NICKEL-COM	Nickel Compounds	-	-	-	-	-	-	-	-
1313-99-1	Nickel oxide	-	-	-	-	-	-	-	-
0-02-5	Nickel refinery dust from the	-	-	-	-	-	-	-	-
12035-72-2	Nickel sulfide (NI3S2)	-	-	-	-	-	-	-	-
7697-37-2	Nitric acid	-	-	-	-	-	-	-	-
139-13-9	Nitrilotriacetic acid	-	-	-	-	-	-	-	-
18662-53-8	Nitrilotriacetic acid, trisodiu	-	-	-	-	-	-	-	-
602-87-9	Nitroacenaphthene, 5-	-	-	-	-	-	-	-	-
88-74-4	Nitroaniline, 2-	-	-	-	-	-	-	-	-
100-01-6	Nitroaniline, 4-	-	-	-	-	-	-	-	-
98-95-3	Nitrobenzene	-	-	-	-	-	-	-	-
7496-02-8	Nitrochrysene, 6-	-	-	-	-	-	-	-	-
607-57-8	Nitrofluorene, 2-	-	-	-	-	-	-	-	-
10102-44-0	Nitrogen dioxide (NO2)	-	-	-	-	75.72	23.23	8.93	6.63
75-52-5	Nitromethane	-	-	-	-	-	-	-	-
79-46-9	Nitropropane, 2-	-	-	-	-	-	-	-	-
5522-43-0	Nitropyrene, 1-	-	-	-	-	-	-	-	-
57835-92-4	Nitropyrene, 4-	-	-	-	-	-	-	-	-
156-10-5	Nitrosodiphenylamine, p-	-	-	-	-	-	-	-	-
3268-87-9	Octachlorodibenzo-p-dioxin,	-	-	-	-	-	-	-	-
39001-02-0	Octachlorodibenzofuran, 1,2	-	-	-	-	-	-	-	-
10028-15-6	Ozone	-	-	-	-	-	-	-	-
74472-37-0	PCB 114 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
31508-00-6	PCB 118 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
65510-44-3	PCB 123 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
57465-28-8	PCB 126 (3,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
38380-0804	PCB 156 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Hep	-	-	-	-	-	-	-	-
32598-13-3	PCB 77 (3,3,4,4-Tetrachloro	-	-	-	-	-	-	-	-
70362-50-4	PCB 81 (3,4,4,5 Tetrachloro	-	-	-	-	-	-	-	-
32598-14-4	PCB105 (2,3,3,4,4 Pentachl	-	-	-	-	-	-	-	-
40321-76-4	Pentachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-1	Pentachlorodibenzodioxins,	-	-	-	-	-	-	-	-
57117-41-6	Pentachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
57117-31-4	Pentachlorodibenzofuran, 2	-	-	-	-	-	-	-	-
00-09-0	Pentachlorodibenzofurans,	-	-	-	-	-	-	-	-
87-86-5	Pentachlorophenol	-	-	-	-	-	-	-	-
109-66-0	Pentane, n-	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
85-01-8	Phenanthrene	-	-	-	-	-	-	-	-
108-95-2	Phenol	-	-	-	-	-	-	-	-
75-44-5	Phosgene	-	-	-	-	-	-	-	-
7803-51-2	Phosphine	-	-	-	-	-	-	-	-
7664-38-2	Phosphoric acid	-	-	-	-	-	-	-	-
85-44-9	Phthalic anhydride	-	-	-	-	-	-	-	-
59536-65-1	Polybrominated Biphenyls	-	-	-	-	-	-	-	-
1336-36-3	Polychlorinated biphenyls (A	-	-	-	-	-	-	-	-
00-08-0	Polychlorinated Dibenzo-P-	-	-	-	-	-	-	-	-
00-05-0	Polychlorinated Dibenzodio	-	-	-	-	-	-	-	-
00-05-1	Polychlorinated Dibenzofura	-	-	-	-	-	-	-	-
130498-29-2	Polycyclic Aromatic Hydroca	-	-	-	-	-	-	-	-
00-01-7	Polycyclic Organic Matter (P	-	-	-	-	0.00	0.00	0.00	0.00
9016-87-9	Polymeric diphenylmethane	-	-	-	-	-	-	-	-
7758-01-2	Potassium bromate	-	-	-	-	-	-	-	-
1120-71-4	Propane sultone, 1,3-	-	-	-	-	-	-	-	-
57-57-8	Propiolactone, beta-	-	-	-	-	-	-	-	-
123-38-6	Propionaldehyde	-	-	-	-	-	-	-	-
115-07-1	Propylene	-	-	-	-	-	-	-	-
78-87-5	Propylene dichloride (1,2-Di	-	-	-	-	-	-	-	-
107-98-2	Propylene Glycol Monometh	-	-	-	-	-	-	-	-
75-56-9	Propylene oxide	-	-	-	-	-	-	-	-
930-55-2	Pyrrolidine, 1-Nitroso-	-	-	-	-	-	-	-	-
7782-49-2	Selenium	-	-	-	-	0.00	0.00	0.00	0.00
0-01-9	Selenium Compounds	-	-	-	-	-	-	-	-
7631-86-9	Silica (crystalline, respirable	-	-	-	-	-	-	-	-
1310-73-2	Sodium hydroxide	-	-	-	-	-	-	-	-
10588-01-9	Sodium Dichromate	-	-	-	-	-	-	-	-
7789-06-2	Strontium chromate	-	-	-	-	-	-	-	-
100-42-5	Styrene	-	-	-	-	-	-	-	-
96-09-3	Styrene oxide	-	-	-	-	-	-	-	-
14808-79-8	Sulfates	-	-	-	-	-	-	-	-
126-33-0	Sulfolane	-	-	-	-	-	-	-	-
7446-09-5	Sulfur dioxide	-	-	-	-	0.45	0.14	0.05	0.04
7664-93-9	Sulfuric acid (aerosol forms	-	-	-	-	-	-	-	-
8014-95-7	Sulfuric Acid mixture w. sulf	-	-	-	-	-	-	-	-
00-09-1	TCDD Eqivalents, 2,3,7,8-	-	-	-	-	-	-	-	-
540-88-5	Tert-Butyl Acetate	-	-	-	-	-	-	-	-
1746-01-6	Tetrachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-8	Tetrachlorodibenzodioxins,	-	-	-	-	-	-	-	-
51207-31-9	Tetrachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-

00-08-6	Tetrachlorodibenzofurans, A	-	-	-	-	-	-	-	-
630-20-6	Tetrachloroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
79-34-5	Tetrachloroethane, 1,1,2,2-	-	-	-	-	-	-	-	-
127-18-4	Tetrachloroethylene (Perchl	-	-	-	-	-	-	-	-
811-97-2	Tetrafluoroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
109-99-9	Tetrahydrofuran	-	-	-	-	-	-	-	-
62-55-5	Thioacetamide	-	-	-	-	-	-	-	-
62-56-6	Thiourea	-	-	-	-	-	-	-	-
108-88-3	Toluene	-	-	-	-	0.00	0.00	0.00	0.00
584-84-9	Toluene-2,4-diisocyanate	-	-	-	-	-	-	-	-
91-08-7	Toluene-2,6-diisocyanate	-	-	-	-	-	-	-	-
95-80-7	Toluene diamine, 2,4-	-	-	-	-	-	-	-	-
26471-62-5	Toluenediisocyanate (mixed	-	-	-	-	-	-	-	-
95-53-4	Toluidine, o- (Methylaniline,	-	-	-	-	-	-	-	-
8001-35-2	Toxaphene (chlorinated ca	-	-	-	-	-	-	-	-
10061-02-6	trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-
120-82-1	Trichlorobenzene, 1,2,4-	-	-	-	-	-	-	-	-
79-00-5	Trichloroethane, 1,1,2-	-	-	-	-	-	-	-	-
79-01-6	Trichloroethylene (TCE)	-	-	-	-	-	-	-	-
75-69-4	Trichlorofluoromethane (CF	-	-	-	-	-	-	-	-
88-06-2	Trichlorophenol, 2,4,6-	-	-	-	-	-	-	-	-
96-18-4	Trichloropropane, 1,2,3-	-	-	-	-	-	-	-	-
96-19-5	Trichloropropene, 1,2,3-	-	-	-	-	-	-	-	-
76-13-1	Trichlorotrifluoroethane, 1,1	-	-	-	-	-	-	-	-
121-44-8	Triethylamine	-	-	-	-	-	-	-	-
420-46-2	Trifluoroethane, 1,1,1-	-	-	-	-	-	-	-	-
526-73-8	Trimethylbenzene, 1,2,3-	-	-	-	-	-	-	-	-
95-63-6	Trimethylbenzene, 1,2,4-	-	-	-	-	-	-	-	-
108-67-8	Trimethylbenzene, 1,3,5-	-	-	-	-	-	-	-	-
URANIUM-SO	Uranium (Soluble Salts)	-	-	-	-	-	-	-	-
7440-61-1	Uranium, Insoluble Compou	-	-	-	-	-	-	-	-
7440-62-2	Vanadium and Compounds	-	-	-	-	-	-	-	-
1314-62-1	Vanadium Pentoxide, (V2O	-	-	-	-	-	-	-	-
108-05-4	Vinyl acetate	-	-	-	-	-	-	-	-
593-60-2	Vinyl bromide	-	-	-	-	-	-	-	-
75-01-4	Vinyl chloride	-	-	-	-	-	-	-	-
1330-20-7	Xylenes	-	-	-	-	-	-	-	-
108-38-3	Xylenes, m-	-	-	-	-	-	-	-	-
95-47-6	Xylenes, o-	-	-	-	-	-	-	-	-
106-42-3	Xylenes, p-	-	-	-	-	-	-	-	-
13530-65-9	Zinc chromate	-	-	-	-	-	-	-	-

RASS version: 2020-12

No inputs needed on this page

Air Concentrations in ug/m3

		Stack #44				Stack #45			
CAS# or MPCA#	**Chemical Name**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**
202-94-8	11H-Benz[b,c]aceanthrylene	-	-	-	-	-	-	-	-
202-98-2	4H-Cyclopenta[d,e,f]chrysen	-	-	-	-	-	-	-	-
75-07-0	Acetaldehyde	-	-	-	-	-	-	-	-
60-35-5	Acetamide	-	-	-	-	-	-	-	-
67-64-1	Acetone	-	-	-	-	-	-	-	-
75-86-5	Acetone Cyanohydrin	-	-	-	-	-	-	-	-
75-05-8	Acetonitrile	-	-	-	-	-	-	-	-
53-96-3	Acetylaminofluorene, 2-	-	-	-	-	-	-	-	-
107-02-8	Acrolein	-	-	-	-	-	-	-	-
79-06-1	Acrylamide	-	-	-	-	-	-	-	-
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-	-	-	-	-	-	-	-	-
79-10-7	Acrylic acid	-	-	-	-	-	-	-	-
107-13-1	Acrylonitrile	-	-	-	-	-	-	-	-
111-69-3	Adiponitrile	-	-	-	-	-	-	-	-
ALDEHYDES	Aldehydes	-	-	-	-	-	-	-	-
309-00-2	Aldrin	-	-	-	-	-	-	-	-
ALIPHATIC-M	Aliphatic Hydrocarbon Strea	-	-	-	-	-	-	-	-
107-05-1	Allyl chloride	-	-	-	-	-	-	-	-
7429-90-5	Aluminum	-	-	-	-	-	-	-	-
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3	-	-	-	-	-	-	-	-
6109-97-3	Amino-9-ethylcarbazolehydr	-	-	-	-	-	-	-	-
117-79-3	Aminoanthraquinone, 2-	-	-	-	-	-	-	-	-
7664-41-7	Ammonia	-	-	-	-	-	-	-	-
62-53-3	Aniline	-	-	-	-	-	-	-	-
191-26-4	Anthanthrene	-	-	-	-	-	-	-	-
7440-36-0	Antimony	-	-	-	-	-	-	-	-
ANTIMONY-C	Antimony Compounds	-	-	-	-	-	-	-	-
1309-64-4	Antimony trioxide	-	-	-	-	-	-	-	-
140-57-8	Aramite	-	-	-	-	-	-	-	-
7440-38-2	Arsenic	0.00	0.00	0.00	0.00	-	-	-	-
ARSENIC-CO	Arsenic Compounds	-	-	-	-	-	-	-	-
1327-53-3	Arsenic Trioxide	-	-	-	-	-	-	-	-
7784-42-1	Arsine	-	-	-	-	-	-	-	-
1332-21-4	Asbestos (units in fibers)	-	-	-	-	-	-	-	-
1332-21-4-LA	Asbestos, Libby Amphibole	-	-	-	-	-	-	-	-
123-77-3	Azodicarbonamide	-	-	-	-	-	-	-	-
10294-40-3	Barium Chromate	-	-	-	-	-	-	-	-
199-54-2	Benz[e]aceanthrylene	-	-	-	-	-	-	-	-
202-33-5	Benz[j]aceanthrylene	-	-	-	-	-	-	-	-
211-91-6	Benz[l]aceanthrylene	-	-	-	-	-	-	-	-
71-43-2	Benzene	0.00	0.00	0.00	0.00	-	-	-	-
92-87-5	Benzidine	-	-	-	-	-	-	-	-
205-82-3	Benzo(j)fluoranthene	-	-	-	-	-	-	-	-
207-08-9	Benzo(k)fluoranthene	-	-	-	-	-	-	-	-
56-55-3	Benzo[a]anthracene	-	-	-	-	-	-	-	-
50-32-8	Benzo[a]pyrene	-	-	-	-	-	-	-	-
205-99-2	Benzo[b]fluoranthene	-	-	-	-	-	-	-	-
205-12-9	Benzo[c]fluorene	-	-	-	-	-	-	-	-
191-24-2	Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-
65-85-0	Benzoic Acid	-	-	-	-	-	-	-	-
100-44-7	Benzyl chloride	-	-	-	-	-	-	-	-
7440-41-7	Beryllium	0.00	0.00	0.00	0.00	-	-	-	-
BERYLLIUM-	Beryllium Compounds	-	-	-	-	-	-	-	-
13510-49-1	Beryllium sulfate	-	-	-	-	-	-	-	-
111-44-4	Bis(2-chloroethyl)ether	-	-	-	-	-	-	-	-
117-81-7	Bis(2-ethylhexyl)phthalate (	-	-	-	-	-	-	-	-
542-88-1	Bis(chloromethyl)ether	-	-	-	-	-	-	-	-
7440-42-8	Boron And Borates Only	-	-	-	-	-	-	-	-
10294-34-5	Boron Trichloride	-	-	-	-	-	-	-	-
7637-07-2	Boron Trifluoride	-	-	-	-	-	-	-	-
108-86-1	Bromobenzene	-	-	-	-	-	-	-	-
74-97-5	Bromochloromethane	-	-	-	-	-	-	-	-
75-27-4	Bromodichloromethane	-	-	-	-	-	-	-	-
75-25-2	Bromoform	-	-	-	-	-	-	-	-
74-83-9	Bromomethane	-	-	-	-	-	-	-	-
106-94-5	Bromopropane, 1-	-	-	-	-	-	-	-	-
106-99-0	Butadiene, 1,3-	-	-	-	-	-	-	-	-
78-92-2	Butyl alcohol, sec-	-	-	-	-	-	-	-	-
111-76-2	Butyl Cellosolve (ethylene g	-	-	-	-	-	-	-	-
25013-16-5	Butylated hydroxyanisole	-	-	-	-	-	-	-	-
3068-88-0	Butyrolactone, beta-	-	-	-	-	-	-	-	-
7440-43-9	Cadmium	0.00	0.00	0.00	0.00	-	-	-	-
CADMIUM-CO	Cadmium Compounds	-	-	-	-	-	-	-	-
13765-19-0	Calcium Chromate	-	-	-	-	-	-	-	-
105-60-2	Caprolactum	-	-	-	-	-	-	-	-
75-15-0	Carbon disulfide	-	-	-	-	-	-	-	-
630-08-0	Carbon Monoxide	65.67	26.24	8.53	6.39	-	-	-	-
56-23-5	Carbon tetrachloride	-	-	-	-	-	-	-	-
463-58-1	Carbonyl sulfide	-	-	-	-	-	-	-	-
111-15-9	Cellosolve Acetate (ethylen	-	-	-	-	-	-	-	-
1306-38-3	Cerium Oxide and Cerium C	-	-	-	-	-	-	-	-
12789-03-6	Chlordane or (57-74-9)	-	-	-	-	-	-	-	-
115-28-6	Chlorendic acid	-	-	-	-	-	-	-	-
108171-26-2	Chlorinated Paraffins (C12,	-	-	-	-	-	-	-	-
7782-50-5	Chlorine	-	-	-	-	-	-	-	-

10049-04-4	Chlorine Oxide (CLO2)	-	-	-	-	-	-	-	-
75-68-3	Chloro-1,1-difluoroethane, 1	-	-	-	-	-	-	-	-
563-47-3	Chloro-2-methylpropene, 3-	-	-	-	-	-	-	-	-
95-83-0	Chloro-o-phenylenediamine	-	-	-	-	-	-	-	-
95-69-2	Chloro-o-toluidine, p-	-	-	-	-	-	-	-	-
532-27-4	Chloroacetophenone, 2-	-	-	-	-	-	-	-	-
108-90-7	Chlorobenzene	-	-	-	-	-	-	-	-
98-56-6	Chlorobenzotrifluoride, 4-	-	-	-	-	-	-	-	-
75-45-6	Chlorodifluoromethane (HC	-	-	-	-	-	-	-	-
67-66-3	Chloroform	-	-	-	-	-	-	-	-
107-30-2	Chloromethyl Methyl Ether	-	-	-	-	-	-	-	-
88-73-3	Chloronitrobenzene, o-	-	-	-	-	-	-	-	-
100-00-5	Chloronitrobenzene, p-	-	-	-	-	-	-	-	-
76-06-2	Chloropicrin	-	-	-	-	-	-	-	-
126-99-8	Chloroprene	-	-	-	-	-	-	-	-
1333-82-0	Chromic acid mists and diss	-	-	-	-	-	-	-	-
7440-47-3	Chromium	-	-	-	-	-	-	-	-
18540-29-9	Chromium (Hexavalent)	0.00	0.00	0.00	0.00	-	-	-	-
18540-29-9-p	Chromium (Hexavalent) - P	-	-	-	-	-	-	-	-
CHROM-COM	Chromium Compounds	-	-	-	-	-	-	-	-
16065-83-1	Chromium(III) Compounds	0.00	0.00	0.00	0.00	-	-	-	-
218-01-9	Chrysene (Benzo(a)phenan	-	-	-	-	-	-	-	-
87-29-6	Cinnamyl anthranilate	-	-	-	-	-	-	-	-
10061-01-5	cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-
8007-45-2	Coal Tar	-	-	-	-	-	-	-	-
7440-48-4	Cobalt	0.00	0.00	0.00	0.00	-	-	-	-
0-00-7	Coke Oven Emissions	-	-	-	-	-	-	-	-
7440-50-8	Copper	-	-	-	-	-	-	-	-
COPPER-CO	Copper Compounds	-	-	-	-	-	-	-	-
120-71-8	Cresidine, p-	-	-	-	-	-	-	-	-
108-39-4	Cresol, m-	-	-	-	-	-	-	-	-
95-48-7	Cresol, o-	-	-	-	-	-	-	-	-
106-44-5	Cresol, p-	-	-	-	-	-	-	-	-
1319-77-3	Cresols/Cresylic acid (isome	-	-	-	-	-	-	-	-
98-82-8	Cumene	-	-	-	-	-	-	-	-
135-20-6	Cupferron	-	-	-	-	-	-	-	-
57-12-5	Cyanide (Cyanide ion, Inorg	-	-	-	-	-	-	-	-
CYANIDE-CO	Cyanide Compounds	-	-	-	-	-	-	-	-
110-82-7	Cyclohexane	-	-	-	-	-	-	-	-
108-94-1	Cyclohexanone	-	-	-	-	-	-	-	-
27208-37-3	Cyclopenta[c,d]pyrene	-	-	-	-	-	-	-	-
50-29-3	DDT	-	-	-	-	-	-	-	-
615-05-4	Diaminoanisole, 2,4-	-	-	-	-	-	-	-	-
101-80-4	Diaminodiphenyl ether, 4,4-	-	-	-	-	-	-	-	-
103-33-3	Diazene, Diphenyl	-	-	-	-	-	-	-	-
226-36-8	Dibenz(a,h)acridine	-	-	-	-	-	-	-	-
224-42-0	Dibenz(a,j)acridine	-	-	-	-	-	-	-	-
53-70-3	Dibenz[a,h]anthracene	-	-	-	-	-	-	-	-
192-65-4	Dibenzo(a,e)pyrene	-	-	-	-	-	-	-	-
189-64-0	Dibenzo(a,h)pyrene	-	-	-	-	-	-	-	-
191-30-0	Dibenzo(a,l)pyrene	-	-	-	-	-	-	-	-
194-59-2	Dibenzo(c,g)carbazole, 7H-	-	-	-	-	-	-	-	-
5385-75-1	Dibenzo[a,e]fluoranthene	-	-	-	-	-	-	-	-
189-55-9	Dibenzo[a,i]pyrene	-	-	-	-	-	-	-	-
96-12-8	Dibromo-3-chloropropane, 1	-	-	-	-	-	-	-	-
764-41-0	Dichloro-2-butene, 1,4-	-	-	-	-	-	-	-	-
1476-11-5	Dichloro-2-butene, cis-1,4-	-	-	-	-	-	-	-	-
106-46-7	Dichlorobenzene(p), 1,4-	-	-	-	-	-	-	-	-
25321-22-6	Dichlorobenzenes	0.00	0.00	0.00	0.00	-	-	-	-
91-94-1	Dichlorobenzidene, 3,3-	-	-	-	-	-	-	-	-
75-71-8	Dichlorodifluoromethane (C	-	-	-	-	-	-	-	-
75-35-4	Dichloroethylene (1,1-) (Vin	-	-	-	-	-	-	-	-
156-60-5	Dichloroethylene, trans-1,2-	-	-	-	-	-	-	-	-
542-75-6	Dichloropropene, 1,3-	-	-	-	-	-	-	-	-
78-88-6	Dichloropropene, 2,3-	-	-	-	-	-	-	-	-
62-73-7	Dichlorvos	-	-	-	-	-	-	-	-
77-73-6	Dicyclopentadiene	-	-	-	-	-	-	-	-
60-57-1	Dieldrin	-	-	-	-	-	-	-	-
0-02-4	Diesel exhaust particulate	-	-	-	-	-	-	-	-
111-42-2	Diethanolamine	-	-	-	-	-	-	-	-
112-34-5	Diethylene Glycol Monobuty	-	-	-	-	-	-	-	-
111-90-0	Diethylene Glycol Monoethy	-	-	-	-	-	-	-	-
75-37-6	Difluoroethane, 1,1-	-	-	-	-	-	-	-	-
108-20-3	Diisopropyl Ether	-	-	-	-	-	-	-	-
60-11-7	Dimethyl aminoazobenzene	-	-	-	-	-	-	-	-
68-12-2	Dimethyl formamide	-	-	-	-	-	-	-	-
108-01-0	Dimethylamino ethanol, 2-	-	-	-	-	-	-	-	-
57-97-6	Dimethylbenz[a]anthracene,	-	-	-	-	-	-	-	-
57-14-7	Dimethylhydrazine, 1,1-	-	-	-	-	-	-	-	-
42397-64-8	Dinitropyrene, 1,6- (BaP)	-	-	-	-	-	-	-	-
42397-65-9	Dinitropyrene, 1,8- (BaP)	-	-	-	-	-	-	-	-
121-14-2	Dinitrotoluene, 2,4-	-	-	-	-	-	-	-	-
123-91-1	Dioxane, 1,4- (1,4-Diethylen	-	-	-	-	-	-	-	-
122-66-7	Diphenylhydrazine, 1,2-	-	-	-	-	-	-	-	-
106-89-8	Epichlorohydrin (l-Chloro-2,	-	-	-	-	-	-	-	-
106-88-7	Epoxybutane, 1,2-	-	-	-	-	-	-	-	-
110-80-5	Ethoxyethanol, 2- (ethylene	-	-	-	-	-	-	-	-
141-78-6	Ethyl acetate	-	-	-	-	-	-	-	-
140-88-5	Ethyl Acrylate	-	-	-	-	-	-	-	-
100-41-4	Ethyl benzene	-	-	-	-	-	-	-	-
51-79-6	Ethyl carbamate (Urethane)	-	-	-	-	-	-	-	-

75-00-3	Ethyl chloride (Chloroethane	-	-	-	-	-	-	-	-
97-63-2	Ethyl Methacrylate	-	-	-	-	-	-	-	-
106-93-4	Ethylene dibromide (Dibrom	-	-	-	-	-	-	-	-
107-06-2	Ethylene dichloride (1,2-Dic	-	-	-	-	-	-	-	-
107-21-1	Ethylene glycol	-	-	-	-	-	-	-	-
75-21-8	Ethylene oxide	-	-	-	-	-	-	-	-
96-45-7	Ethylene thiourea	-	-	-	-	-	-	-	-
75-34-3	Ethylidene dichloride (1,1-D	-	-	-	-	-	-	-	-
206-44-0	Fluoranthene	-	-	-	-	-	-	-	-
FLUORIDES	Fluorides (except hydrogen	-	-	-	-	-	-	-	-
50-00-0	Formaldehyde	0.06	0.02	0.01	0.01	-	-	-	-
64-18-6	Formic Acid	-	-	-	-	-	-	-	-
111-30-8	Glutaraldehyde	-	-	-	-	-	-	-	-
0-01-2	Glycol ethers	-	-	-	-	-	-	-	-
76-44-8	Heptachlor	-	-	-	-	-	-	-	-
1024-57-3	Heptachlor epoxide	-	-	-	-	-	-	-	-
35822-46-9	Heptachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-5	Heptachlorodibenzodioxin,	-	-	-	-	-	-	-	-
67562-39-4	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
55673-89-7	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
00-08-4	Heptachlorodibenzofuran, A	-	-	-	-	-	-	-	-
142-82-5	Heptane, N	-	-	-	-	-	-	-	-
118-74-1	Hexachlorobenzene	-	-	-	-	-	-	-	-
87-68-3	Hexachlorobutadiene	-	-	-	-	-	-	-	-
608-73-1	Hexachlorocyclohexane (tec	-	-	-	-	-	-	-	-
319-84-6	Hexachlorocyclohexane, alp	-	-	-	-	-	-	-	-
319-85-7	Hexachlorocyclohexane, be	-	-	-	-	-	-	-	-
77-47-4	Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-
39227-28-6	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
57653-85-7	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
19408-74-3	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-3	Hexachlorodibenzodioxins,	-	-	-	-	-	-	-	-
70648-26-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
57117-44-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
72918-21-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
60851-34-5	Hexachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-
00-08-2	Hexachlorodibenzofurans, A	-	-	-	-	-	-	-	-
67-72-1	Hexachloroethane	-	-	-	-	-	-	-	-
822-06-0	Hexamethylene-1,6-diisocya	-	-	-	-	-	-	-	-
110-54-3	Hexane	1.41	0.56	0.18	0.14	-	-	-	-
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl	-	-	-	-	-	-	-	-
591-78-6	Hexanone-2	-	-	-	-	-	-	-	-
302-01-2	Hydrazine	-	-	-	-	-	-	-	-
10034-93-2	Hydrazine sulfate	-	-	-	-	-	-	-	-
7647-01-0	Hydrochloric acid (hydrogen	-	-	-	-	-	-	-	-
74-90-8	Hydrogen cyanide	-	-	-	-	-	-	-	-
7664-39-3	Hydrogen fluoride (Hydroflu	-	-	-	-	-	-	-	-
7783-07-5	Hydrogen selenide	-	-	-	-	-	-	-	-
7783-06-4	Hydrogen sulfide	-	-	-	-	-	-	-	-
193-39-5	Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-
5888-33-5	Isobornyl acrylate	-	-	-	-	-	-	-	-
78-59-1	Isophorone	-	-	-	-	-	-	-	-
67-63-0	Isopropyl alcohol	-	-	-	-	-	-	-	-
7439-92-1	Lead	-	-	-	-	-	-	-	-
7758-97-6	Lead Chromate	-	-	-	-	-	-	-	-
LEAD-COMP	Lead Compounds	-	-	-	-	-	-	-	-
58-89-9	Lindane (all isomers)	-	-	-	-	-	-	-	-
108-31-6	Maleic anhydride	-	-	-	-	-	-	-	-
7439-96-5	Manganese	0.00	0.00	0.00	0.00	-	-	-	-
MANGANESE	Manganese Compounds	-	-	-	-	-	-	-	-
7439-97-6	Mercury (elemental)	0.00	0.00	0.00	0.00	-	-	-	-
MERCURY-C	Mercury Compounds	-	-	-	-	-	-	-	-
126-98-7	Methacrylonitrile	-	-	-	-	-	-	-	-
67-56-1	Methanol	-	-	-	-	-	-	-	-
109-86-4	Methoxyethanol, 2- (ethylen	-	-	-	-	-	-	-	-
96-33-3	Methyl acrylate	-	-	-	-	-	-	-	-
110-49-6	Methyl Cellosolve Acetate	-	-	-	-	-	-	-	-
74-87-3	Methyl chloride (Chlorometh	-	-	-	-	-	-	-	-
71-55-6	Methyl chloroform (1,1,1-Tri	-	-	-	-	-	-	-	-
78-93-3	Methyl ethyl ketone (2-Buta	-	-	-	-	-	-	-	-
60-34-4	Methyl Hydrazine	-	-	-	-	-	-	-	-
108-10-1	Methyl isobutyl ketone (Hex	-	-	-	-	-	-	-	-
624-83-9	Methyl isocyanate	-	-	-	-	-	-	-	-
80-62-6	Methyl methacrylate	-	-	-	-	-	-	-	-
1634-04-4	Methyl tert butyl ether	-	-	-	-	-	-	-	-
56-49-5	Methylcholanthrene, 3-	-	-	-	-	-	-	-	-
3697-24-3	Methylchrysene, 5-	-	-	-	-	-	-	-	-
101-14-4	Methylene bis(2-chloroanilin	-	-	-	-	-	-	-	-
74-95-3	Methylene Bromide	-	-	-	-	-	-	-	-
75-09-2	Methylene chloride (Dichlor	-	-	-	-	-	-	-	-
101-68-8	Methylene diphenyl diisocya	-	-	-	-	-	-	-	-
101-77-9	Methylenedianiline, 4,4-	-	-	-	-	-	-	-	-
90-94-8	Michler's ketone	-	-	-	-	-	-	-	-
10595-95-6	N- Nitrosomethylethylamine	-	-	-	-	-	-	-	-
924-16-3	N-Nitrosodi-n-butylamine	-	-	-	-	-	-	-	-
621-64-7	N-Nitrosodi-n-propylamine	-	-	-	-	-	-	-	-
55-18-5	N-Nitrosodiethylamine	-	-	-	-	-	-	-	-
62-75-9	N-Nitrosodimethylamine	-	-	-	-	-	-	-	-
86-30-6	N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-
59-89-2	N-Nitrosomorpholine	-	-	-	-	-	-	-	-
100-75-4	N-Nitrosopiperidine	-	-	-	-	-	-	-	-

111-84-2	N-Nonane	-	-	-	-	-	-	-	-
64724-95-6	Naphtha, High Flash Aroma	-	-	-	-	-	-	-	-
91-20-3	Naphthalene	0.00	0.00	0.00	0.00	-	-	-	-
193-09-9	Naphtho[2,3-e]pyrene	-	-	-	-	-	-	-	-
7440-02-0	Nickel	0.00	0.00	0.00	0.00	-	-	-	-
NICKEL-COM	Nickel Compounds	-	-	-	-	-	-	-	-
1313-99-1	Nickel oxide	-	-	-	-	-	-	-	-
0-02-5	Nickel refinery dust from the	-	-	-	-	-	-	-	-
12035-72-2	Nickel sulfide (NI3S2)	-	-	-	-	-	-	-	-
7697-37-2	Nitric acid	-	-	-	-	-	-	-	-
139-13-9	Nitrilotriacetic acid	-	-	-	-	-	-	-	-
18662-53-8	Nitrilotriacetic acid, trisodiu	-	-	-	-	-	-	-	-
602-87-9	Nitroacenaphthene, 5-	-	-	-	-	-	-	-	-
88-74-4	Nitroaniline, 2-	-	-	-	-	-	-	-	-
100-01-6	Nitroaniline, 4-	-	-	-	-	-	-	-	-
98-95-3	Nitrobenzene	-	-	-	-	-	-	-	-
7496-02-8	Nitrochrysene, 6-	-	-	-	-	-	-	-	-
607-57-8	Nitrofluorene, 2-	-	-	-	-	-	-	-	-
10102-44-0	Nitrogen dioxide (NO2)	78.18	31.24	10.16	7.61	-	-	-	-
75-52-5	Nitromethane	-	-	-	-	-	-	-	-
79-46-9	Nitropropane, 2-	-	-	-	-	-	-	-	-
5522-43-0	Nitropyrene, 1-	-	-	-	-	-	-	-	-
57835-92-4	Nitropyrene, 4-	-	-	-	-	-	-	-	-
156-10-5	Nitrosodiphenylamine, p-	-	-	-	-	-	-	-	-
3268-87-9	Octachlorodibenzo-p-dioxin,	-	-	-	-	-	-	-	-
39001-02-0	Octachlorodibenzofuran, 1,2	-	-	-	-	-	-	-	-
10028-15-6	Ozone	-	-	-	-	-	-	-	-
74472-37-0	PCB 114 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
31508-00-6	PCB 118 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
65510-44-3	PCB 123 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
57465-28-8	PCB 126 (3,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
38380-0804	PCB 156 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Hep	-	-	-	-	-	-	-	-
32598-13-3	PCB 77 (3,3,4,4-Tetrachloro	-	-	-	-	-	-	-	-
70362-50-4	PCB 81 (3,4,4,5 Tetrachloro	-	-	-	-	-	-	-	-
32598-14-4	PCB105 (2,3,3,4,4 Pentachl	-	-	-	-	-	-	-	-
40321-76-4	Pentachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-1	Pentachlorodibenzodioxins,	-	-	-	-	-	-	-	-
57117-41-6	Pentachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
57117-31-4	Pentachlorodibenzofuran, 2	-	-	-	-	-	-	-	-
00-09-0	Pentachlorodibenzofurans,	-	-	-	-	-	-	-	-
87-86-5	Pentachlorophenol	-	-	-	-	-	-	-	-
109-66-0	Pentane, n-	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
85-01-8	Phenanthrene	-	-	-	-	-	-	-	-
108-95-2	Phenol	-	-	-	-	-	-	-	-
75-44-5	Phosgene	-	-	-	-	-	-	-	-
7803-51-2	Phosphine	-	-	-	-	-	-	-	-
7664-38-2	Phosphoric acid	-	-	-	-	-	-	-	-
85-44-9	Phthalic anhydride	-	-	-	-	-	-	-	-
59536-65-1	Polybrominated Biphenyls	-	-	-	-	-	-	-	-
1336-36-3	Polychlorinated biphenyls (A	-	-	-	-	-	-	-	-
00-08-0	Polychlorinated Dibenzo-P-	-	-	-	-	-	-	-	-
00-05-0	Polychlorinated Dibenzodio	-	-	-	-	-	-	-	-
00-05-1	Polychlorinated Dibenzofura	-	-	-	-	-	-	-	-
130498-29-2	Polycyclic Aromatic Hydroca	-	-	-	-	-	-	-	-
00-01-7	Polycyclic Organic Matter (P	0.00	0.00	0.00	0.00	-	-	-	-
9016-87-9	Polymeric diphenylmethane	-	-	-	-	-	-	-	-
7758-01-2	Potassium bromate	-	-	-	-	-	-	-	-
1120-71-4	Propane sultone, 1,3-	-	-	-	-	-	-	-	-
57-57-8	Propiolactone, beta-	-	-	-	-	-	-	-	-
123-38-6	Propionaldehyde	-	-	-	-	-	-	-	-
115-07-1	Propylene	-	-	-	-	-	-	-	-
78-87-5	Propylene dichloride (1,2-Di	-	-	-	-	-	-	-	-
107-98-2	Propylene Glycol Monometh	-	-	-	-	-	-	-	-
75-56-9	Propylene oxide	-	-	-	-	-	-	-	-
930-55-2	Pyrrolidine, 1-Nitroso-	-	-	-	-	-	-	-	-
7782-49-2	Selenium	0.00	0.00	0.00	0.00	-	-	-	-
0-01-9	Selenium Compounds	-	-	-	-	-	-	-	-
7631-86-9	Silica (crystalline, respirable	-	-	-	-	-	-	-	-
1310-73-2	Sodium hydroxide	-	-	-	-	-	-	-	-
10588-01-9	Sodium Dichromate	-	-	-	-	-	-	-	-
7789-06-2	Strontium chromate	-	-	-	-	-	-	-	-
100-42-5	Styrene	-	-	-	-	-	-	-	-
96-09-3	Styrene oxide	-	-	-	-	-	-	-	-
14808-79-8	Sulfates	-	-	-	-	-	-	-	-
126-33-0	Sulfolane	-	-	-	-	-	-	-	-
7446-09-5	Sulfur dioxide	0.47	0.19	0.06	0.05	-	-	-	-
7664-93-9	Sulfuric acid (aerosol forms	-	-	-	-	-	-	-	-
8014-95-7	Sulfuric Acid mixture w. sulf	-	-	-	-	-	-	-	-
00-09-1	TCDD Eqivalents, 2,3,7,8-	-	-	-	-	-	-	-	-
540-88-5	Tert-Butyl Acetate	-	-	-	-	-	-	-	-
1746-01-6	Tetrachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-8	Tetrachlorodibenzodioxins,	-	-	-	-	-	-	-	-
51207-31-9	Tetrachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-

00-08-6	Tetrachlorodibenzofurans, A	-	-	-	-	-	-	-	-
630-20-6	Tetrachloroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
79-34-5	Tetrachloroethane, 1,1,2,2-	-	-	-	-	-	-	-	-
127-18-4	Tetrachloroethylene (Perchl	-	-	-	-	-	-	-	-
811-97-2	Tetrafluoroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
109-99-9	Tetrahydrofuran	-	-	-	-	-	-	-	-
62-55-5	Thioacetamide	-	-	-	-	-	-	-	-
62-56-6	Thiourea	-	-	-	-	-	-	-	-
108-88-3	Toluene	0.00	0.00	0.00	0.00	-	-	-	-
584-84-9	Toluene-2,4-diisocyanate	-	-	-	-	-	-	-	-
91-08-7	Toluene-2,6-diisocyanate	-	-	-	-	-	-	-	-
95-80-7	Toluene diamine, 2,4-	-	-	-	-	-	-	-	-
26471-62-5	Toluenediisocyanate (mixed	-	-	-	-	-	-	-	-
95-53-4	Toluidine, o- (Methylaniline,	-	-	-	-	-	-	-	-
8001-35-2	Toxaphene (chlorinated ca	-	-	-	-	-	-	-	-
10061-02-6	trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-
120-82-1	Trichlorobenzene, 1,2,4-	-	-	-	-	-	-	-	-
79-00-5	Trichloroethane, 1,1,2-	-	-	-	-	-	-	-	-
79-01-6	Trichloroethylene (TCE)	-	-	-	-	-	-	-	-
75-69-4	Trichlorofluoromethane (CF	-	-	-	-	-	-	-	-
88-06-2	Trichlorophenol, 2,4,6-	-	-	-	-	-	-	-	-
96-18-4	Trichloropropane, 1,2,3-	-	-	-	-	-	-	-	-
96-19-5	Trichloropropene, 1,2,3-	-	-	-	-	-	-	-	-
76-13-1	Trichlorotrifluoroethane, 1,1	-	-	-	-	-	-	-	-
121-44-8	Triethylamine	-	-	-	-	-	-	-	-
420-46-2	Trifluoroethane, 1,1,1-	-	-	-	-	-	-	-	-
526-73-8	Trimethylbenzene, 1,2,3-	-	-	-	-	-	-	-	-
95-63-6	Trimethylbenzene, 1,2,4-	-	-	-	-	-	-	-	-
108-67-8	Trimethylbenzene, 1,3,5-	-	-	-	-	-	-	-	-
URANIUM-SO	Uranium (Soluble Salts)	-	-	-	-	-	-	-	-
7440-61-1	Uranium, Insoluble Compou	-	-	-	-	-	-	-	-
7440-62-2	Vanadium and Compounds	-	-	-	-	-	-	-	-
1314-62-1	Vanadium Pentoxide, (V2O	-	-	-	-	-	-	-	-
108-05-4	Vinyl acetate	-	-	-	-	-	-	-	-
593-60-2	Vinyl bromide	-	-	-	-	-	-	-	-
75-01-4	Vinyl chloride	-	-	-	-	-	-	-	-
1330-20-7	Xylenes	-	-	-	-	-	-	-	-
108-38-3	Xylenes, m-	-	-	-	-	-	-	-	-
95-47-6	Xylenes, o-	-	-	-	-	-	-	-	-
106-42-3	Xylenes, p-	-	-	-	-	-	-	-	-
13530-65-9	Zinc chromate	-	-	-	-	-	-	-	-

RASS version: 2020-12

No inputs needed on this page

Air Concentrations in ug/m3

		Stack #46				Stack #47			
CAS# or MPCA#	**Chemical Name**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**
202-94-8	11H-Benz[b,c]aceanthrylene	-	-	-	-	-	-	-	-
202-98-2	4H-Cyclopenta[d,e,f]chrysen	-	-	-	-	-	-	-	-
75-07-0	Acetaldehyde	-	-	-	-	-	-	-	-
60-35-5	Acetamide	-	-	-	-	-	-	-	-
67-64-1	Acetone	-	-	-	-	-	-	-	-
75-86-5	Acetone Cyanohydrin	-	-	-	-	-	-	-	-
75-05-8	Acetonitrile	-	-	-	-	-	-	-	-
53-96-3	Acetylaminofluorene, 2-	-	-	-	-	-	-	-	-
107-02-8	Acrolein	-	-	-	-	-	-	-	-
79-06-1	Acrylamide	-	-	-	-	-	-	-	-
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-	-	-	-	-	-	-	-	-
79-10-7	Acrylic acid	-	-	-	-	-	-	-	-
107-13-1	Acrylonitrile	-	-	-	-	-	-	-	-
111-69-3	Adiponitrile	-	-	-	-	-	-	-	-
ALDEHYDES	Aldehydes	-	-	-	-	-	-	-	-
309-00-2	Aldrin	-	-	-	-	-	-	-	-
ALIPHATIC-M	Aliphatic Hydrocarbon Strea	-	-	-	-	-	-	-	-
107-05-1	Allyl chloride	-	-	-	-	-	-	-	-
7429-90-5	Aluminum	-	-	-	-	-	-	-	-
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3	-	-	-	-	-	-	-	-
6109-97-3	Amino-9-ethylcarbazolehydr	-	-	-	-	-	-	-	-
117-79-3	Aminoanthraquinone, 2-	-	-	-	-	-	-	-	-
7664-41-7	Ammonia	-	-	-	-	-	-	-	-
62-53-3	Aniline	-	-	-	-	-	-	-	-
191-26-4	Anthanthrene	-	-	-	-	-	-	-	-
7440-36-0	Antimony	-	-	-	-	-	-	-	-
ANTIMONY-C	Antimony Compounds	-	-	-	-	-	-	-	-
1309-64-4	Antimony trioxide	-	-	-	-	-	-	-	-
140-57-8	Aramite	-	-	-	-	-	-	-	-
7440-38-2	Arsenic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ARSENIC-CO	Arsenic Compounds	-	-	-	-	-	-	-	-
1327-53-3	Arsenic Trioxide	-	-	-	-	-	-	-	-
7784-42-1	Arsine	-	-	-	-	-	-	-	-
1332-21-4	Asbestos (units in fibers)	-	-	-	-	-	-	-	-
1332-21-4-LA	Asbestos, Libby Amphibole	-	-	-	-	-	-	-	-
123-77-3	Azodicarbonamide	-	-	-	-	-	-	-	-
10294-40-3	Barium Chromate	-	-	-	-	-	-	-	-
199-54-2	Benz[e]aceanthrylene	-	-	-	-	-	-	-	-
202-33-5	Benz[j]aceanthrylene	-	-	-	-	-	-	-	-
211-91-6	Benz[l]aceanthrylene	-	-	-	-	-	-	-	-
71-43-2	Benzene	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
92-87-5	Benzidine	-	-	-	-	-	-	-	-
205-82-3	Benzo(j)fluoranthene	-	-	-	-	-	-	-	-
207-08-9	Benzo(k)fluoranthene	-	-	-	-	-	-	-	-
56-55-3	Benzo[a]anthracene	-	-	-	-	-	-	-	-
50-32-8	Benzo[a]pyrene	-	-	-	-	-	-	-	-
205-99-2	Benzo[b]fluoranthene	-	-	-	-	-	-	-	-
205-12-9	Benzo[c]fluorene	-	-	-	-	-	-	-	-
191-24-2	Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-
65-85-0	Benzoic Acid	-	-	-	-	-	-	-	-
100-44-7	Benzyl chloride	-	-	-	-	-	-	-	-
7440-41-7	Beryllium	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BERYLLIUM-	Beryllium Compounds	-	-	-	-	-	-	-	-
13510-49-1	Beryllium sulfate	-	-	-	-	-	-	-	-
111-44-4	Bis(2-chloroethyl)ether	-	-	-	-	-	-	-	-
117-81-7	Bis(2-ethylhexyl)phthalate (	-	-	-	-	-	-	-	-
542-88-1	Bis(chloromethyl)ether	-	-	-	-	-	-	-	-
7440-42-8	Boron And Borates Only	-	-	-	-	-	-	-	-
10294-34-5	Boron Trichloride	-	-	-	-	-	-	-	-
7637-07-2	Boron Trifluoride	-	-	-	-	-	-	-	-
108-86-1	Bromobenzene	-	-	-	-	-	-	-	-
74-97-5	Bromochloromethane	-	-	-	-	-	-	-	-
75-27-4	Bromodichloromethane	-	-	-	-	-	-	-	-
75-25-2	Bromoform	-	-	-	-	-	-	-	-
74-83-9	Bromomethane	-	-	-	-	-	-	-	-
106-94-5	Bromopropane, 1-	-	-	-	-	-	-	-	-
106-99-0	Butadiene, 1,3-	-	-	-	-	-	-	-	-
78-92-2	Butyl alcohol, sec-	-	-	-	-	-	-	-	-
111-76-2	Butyl Cellosolve (ethylene g	-	-	-	-	-	-	-	-
25013-16-5	Butylated hydroxyanisole	-	-	-	-	-	-	-	-
3068-88-0	Butyrolactone, beta-	-	-	-	-	-	-	-	-
7440-43-9	Cadmium	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CADMIUM-CO	Cadmium Compounds	-	-	-	-	-	-	-	-
13765-19-0	Calcium Chromate	-	-	-	-	-	-	-	-
105-60-2	Caprolactum	-	-	-	-	-	-	-	-
75-15-0	Carbon disulfide	-	-	-	-	-	-	-	-
630-08-0	Carbon Monoxide	14.63	4.75	1.27	0.71	3.42	1.31	0.31	0.18
56-23-5	Carbon tetrachloride	-	-	-	-	-	-	-	-
463-58-1	Carbonyl sulfide	-	-	-	-	-	-	-	-
111-15-9	Cellosolve Acetate (ethylen	-	-	-	-	-	-	-	-
1306-38-3	Cerium Oxide and Cerium C	-	-	-	-	-	-	-	-
12789-03-6	Chlordane or (57-74-9)	-	-	-	-	-	-	-	-
115-28-6	Chlorendic acid	-	-	-	-	-	-	-	-
108171-26-2	Chlorinated Paraffins (C12,	-	-	-	-	-	-	-	-
7782-50-5	Chlorine	-	-	-	-	-	-	-	-

10049-04-4	Chlorine Oxide (CLO2)	-	-	-	-	-	-	-	-
75-68-3	Chloro-1,1-difluoroethane, 1	-	-	-	-	-	-	-	-
563-47-3	Chloro-2-methylpropene, 3-	-	-	-	-	-	-	-	-
95-83-0	Chloro-o-phenylenediamine	-	-	-	-	-	-	-	-
95-69-2	Chloro-o-toluidine, p-	-	-	-	-	-	-	-	-
532-27-4	Chloroacetophenone, 2-	-	-	-	-	-	-	-	-
108-90-7	Chlorobenzene	-	-	-	-	-	-	-	-
98-56-6	Chlorobenzotrifluoride, 4-	-	-	-	-	-	-	-	-
75-45-6	Chlorodifluoromethane (HC	-	-	-	-	-	-	-	-
67-66-3	Chloroform	-	-	-	-	-	-	-	-
107-30-2	Chloromethyl Methyl Ether	-	-	-	-	-	-	-	-
88-73-3	Chloronitrobenzene, o-	-	-	-	-	-	-	-	-
100-00-5	Chloronitrobenzene, p-	-	-	-	-	-	-	-	-
76-06-2	Chloropicrin	-	-	-	-	-	-	-	-
126-99-8	Chloroprene	-	-	-	-	-	-	-	-
1333-82-0	Chromic acid mists and diss	-	-	-	-	-	-	-	-
7440-47-3	Chromium	-	-	-	-	-	-	-	-
18540-29-9	Chromium (Hexavalent)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18540-29-9-p	Chromium (Hexavalent) - P	-	-	-	-	-	-	-	-
CHROM-COM	Chromium Compounds	-	-	-	-	-	-	-	-
16065-83-1	Chromium(III) Compounds	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
218-01-9	Chrysene (Benzo(a)phenan	-	-	-	-	-	-	-	-
87-29-6	Cinnamyl anthranilate	-	-	-	-	-	-	-	-
10061-01-5	cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-
8007-45-2	Coal Tar	-	-	-	-	-	-	-	-
7440-48-4	Cobalt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0-00-7	Coke Oven Emissions	-	-	-	-	-	-	-	-
7440-50-8	Copper	-	-	-	-	-	-	-	-
COPPER-CO	Copper Compounds	-	-	-	-	-	-	-	-
120-71-8	Cresidine, p-	-	-	-	-	-	-	-	-
108-39-4	Cresol, m-	-	-	-	-	-	-	-	-
95-48-7	Cresol, o-	-	-	-	-	-	-	-	-
106-44-5	Cresol, p-	-	-	-	-	-	-	-	-
1319-77-3	Cresols/Cresylic acid (isome	-	-	-	-	-	-	-	-
98-82-8	Cumene	-	-	-	-	-	-	-	-
135-20-6	Cupferron	-	-	-	-	-	-	-	-
57-12-5	Cyanide (Cyanide ion, Inorg	-	-	-	-	-	-	-	-
CYANIDE-CO	Cyanide Compounds	-	-	-	-	-	-	-	-
110-82-7	Cyclohexane	-	-	-	-	-	-	-	-
108-94-1	Cyclohexanone	-	-	-	-	-	-	-	-
27208-37-3	Cyclopenta[c,d]pyrene	-	-	-	-	-	-	-	-
50-29-3	DDT	-	-	-	-	-	-	-	-
615-05-4	Diaminoanisole, 2,4-	-	-	-	-	-	-	-	-
101-80-4	Diaminodiphenyl ether, 4,4-	-	-	-	-	-	-	-	-
103-33-3	Diazene, Diphenyl	-	-	-	-	-	-	-	-
226-36-8	Dibenz(a,h)acridine	-	-	-	-	-	-	-	-
224-42-0	Dibenz(a,j)acridine	-	-	-	-	-	-	-	-
53-70-3	Dibenz[a,h]anthracene	-	-	-	-	-	-	-	-
192-65-4	Dibenzo(a,e)pyrene	-	-	-	-	-	-	-	-
189-64-0	Dibenzo(a,h)pyrene	-	-	-	-	-	-	-	-
191-30-0	Dibenzo(a,l)pyrene	-	-	-	-	-	-	-	-
194-59-2	Dibenzo(c,g)carbazole, 7H-	-	-	-	-	-	-	-	-
5385-75-1	Dibenzo[a,e]fluoranthene	-	-	-	-	-	-	-	-
189-55-9	Dibenzo[a,i]pyrene	-	-	-	-	-	-	-	-
96-12-8	Dibromo-3-chloropropane, 1	-	-	-	-	-	-	-	-
764-41-0	Dichloro-2-butene, 1,4-	-	-	-	-	-	-	-	-
1476-11-5	Dichloro-2-butene, cis-1,4-	-	-	-	-	-	-	-	-
106-46-7	Dichlorobenzene(p), 1,4-	-	-	-	-	-	-	-	-
25321-22-6	Dichlorobenzenes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
91-94-1	Dichlorobenzidene, 3,3-	-	-	-	-	-	-	-	-
75-71-8	Dichlorodifluoromethane (C	-	-	-	-	-	-	-	-
75-35-4	Dichloroethylene (1,1-) (Vin	-	-	-	-	-	-	-	-
156-60-5	Dichloroethylene, trans-1,2-	-	-	-	-	-	-	-	-
542-75-6	Dichloropropene, 1,3-	-	-	-	-	-	-	-	-
78-88-6	Dichloropropene, 2,3-	-	-	-	-	-	-	-	-
62-73-7	Dichlorvos	-	-	-	-	-	-	-	-
77-73-6	Dicyclopentadiene	-	-	-	-	-	-	-	-
60-57-1	Dieldrin	-	-	-	-	-	-	-	-
0-02-4	Diesel exhaust particulate	-	-	-	-	-	-	-	-
111-42-2	Diethanolamine	-	-	-	-	-	-	-	-
112-34-5	Diethylene Glycol Monobuty	-	-	-	-	-	-	-	-
111-90-0	Diethylene Glycol Monoethy	-	-	-	-	-	-	-	-
75-37-6	Difluoroethane, 1,1-	-	-	-	-	-	-	-	-
108-20-3	Diisopropyl Ether	-	-	-	-	-	-	-	-
60-11-7	Dimethyl aminoazobenzene	-	-	-	-	-	-	-	-
68-12-2	Dimethyl formamide	-	-	-	-	-	-	-	-
108-01-0	Dimethylamino ethanol, 2-	-	-	-	-	-	-	-	-
57-97-6	Dimethylbenz[a]anthracene,	-	-	-	-	-	-	-	-
57-14-7	Dimethylhydrazine, 1,1-	-	-	-	-	-	-	-	-
42397-64-8	Dinitropyrene, 1,6- (BaP)	-	-	-	-	-	-	-	-
42397-65-9	Dinitropyrene, 1,8- (BaP)	-	-	-	-	-	-	-	-
121-14-2	Dinitrotoluene, 2,4-	-	-	-	-	-	-	-	-
123-91-1	Dioxane, 1,4- (1,4-Diethylen	-	-	-	-	-	-	-	-
122-66-7	Diphenylhydrazine, 1,2-	-	-	-	-	-	-	-	-
106-89-8	Epichlorohydrin (l-Chloro-2,	-	-	-	-	-	-	-	-
106-88-7	Epoxybutane, 1,2-	-	-	-	-	-	-	-	-
110-80-5	Ethoxyethanol, 2- (ethylene	-	-	-	-	-	-	-	-
141-78-6	Ethyl acetate	-	-	-	-	-	-	-	-
140-88-5	Ethyl Acrylate	-	-	-	-	-	-	-	-
100-41-4	Ethyl benzene	-	-	-	-	-	-	-	-
51-79-6	Ethyl carbamate (Urethane)	-	-	-	-	-	-	-	-

75-00-3	Ethyl chloride (Chloroethane	-	-	-	-	-	-	-	-
97-63-2	Ethyl Methacrylate	-	-	-	-	-	-	-	-
106-93-4	Ethylene dibromide (Dibrom	-	-	-	-	-	-	-	-
107-06-2	Ethylene dichloride (1,2-Dic	-	-	-	-	-	-	-	-
107-21-1	Ethylene glycol	-	-	-	-	-	-	-	-
75-21-8	Ethylene oxide	-	-	-	-	-	-	-	-
96-45-7	Ethylene thiourea	-	-	-	-	-	-	-	-
75-34-3	Ethylidene dichloride (1,1-D	-	-	-	-	-	-	-	-
206-44-0	Fluoranthene	-	-	-	-	-	-	-	-
FLUORIDES	Fluorides (except hydrogen	-	-	-	-	-	-	-	-
50-00-0	Formaldehyde	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
64-18-6	Formic Acid	-	-	-	-	-	-	-	-
111-30-8	Glutaraldehyde	-	-	-	-	-	-	-	-
0-01-2	Glycol ethers	-	-	-	-	-	-	-	-
76-44-8	Heptachlor	-	-	-	-	-	-	-	-
1024-57-3	Heptachlor epoxide	-	-	-	-	-	-	-	-
35822-46-9	Heptachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-5	Heptachlorodibenzodioxin,	-	-	-	-	-	-	-	-
67562-39-4	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
55673-89-7	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
00-08-4	Heptachlorodibenzofuran, A	-	-	-	-	-	-	-	-
142-82-5	Heptane, N	-	-	-	-	-	-	-	-
118-74-1	Hexachlorobenzene	-	-	-	-	-	-	-	-
87-68-3	Hexachlorobutadiene	-	-	-	-	-	-	-	-
608-73-1	Hexachlorocyclohexane (tec	-	-	-	-	-	-	-	-
319-84-6	Hexachlorocyclohexane, alp	-	-	-	-	-	-	-	-
319-85-7	Hexachlorocyclohexane, be	-	-	-	-	-	-	-	-
77-47-4	Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-
39227-28-6	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
57653-85-7	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
19408-74-3	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-3	Hexachlorodibenzodioxins,	-	-	-	-	-	-	-	-
70648-26-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
57117-44-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
72918-21-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
60851-34-5	Hexachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-
00-08-2	Hexachlorodibenzofurans, A	-	-	-	-	-	-	-	-
67-72-1	Hexachloroethane	-	-	-	-	-	-	-	-
822-06-0	Hexamethylene-1,6-diisocya	-	-	-	-	-	-	-	-
110-54-3	Hexane	0.31	0.10	0.03	0.02	0.07	0.03	0.01	0.00
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl	-	-	-	-	-	-	-	-
591-78-6	Hexanone-2	-	-	-	-	-	-	-	-
302-01-2	Hydrazine	-	-	-	-	-	-	-	-
10034-93-2	Hydrazine sulfate	-	-	-	-	-	-	-	-
7647-01-0	Hydrochloric acid (hydrogen	-	-	-	-	-	-	-	-
74-90-8	Hydrogen cyanide	-	-	-	-	-	-	-	-
7664-39-3	Hydrogen fluoride (Hydroflu	-	-	-	-	-	-	-	-
7783-07-5	Hydrogen selenide	-	-	-	-	-	-	-	-
7783-06-4	Hydrogen sulfide	-	-	-	-	-	-	-	-
193-39-5	Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-
5888-33-5	Isobornyl acrylate	-	-	-	-	-	-	-	-
78-59-1	Isophorone	-	-	-	-	-	-	-	-
67-63-0	Isopropyl alcohol	-	-	-	-	-	-	-	-
7439-92-1	Lead	-	-	-	-	-	-	-	-
7758-97-6	Lead Chromate	-	-	-	-	-	-	-	-
LEAD-COMP	Lead Compounds	-	-	-	-	-	-	-	-
58-89-9	Lindane (all isomers)	-	-	-	-	-	-	-	-
108-31-6	Maleic anhydride	-	-	-	-	-	-	-	-
7439-96-5	Manganese	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MANGANESE	Manganese Compounds	-	-	-	-	-	-	-	-
7439-97-6	Mercury (elemental)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MERCURY-C	Mercury Compounds	-	-	-	-	-	-	-	-
126-98-7	Methacrylonitrile	-	-	-	-	-	-	-	-
67-56-1	Methanol	-	-	-	-	-	-	-	-
109-86-4	Methoxyethanol, 2- (ethylen	-	-	-	-	-	-	-	-
96-33-3	Methyl acrylate	-	-	-	-	-	-	-	-
110-49-6	Methyl Cellosolve Acetate	-	-	-	-	-	-	-	-
74-87-3	Methyl chloride (Chlorometh	-	-	-	-	-	-	-	-
71-55-6	Methyl chloroform (1,1,1-Tri	-	-	-	-	-	-	-	-
78-93-3	Methyl ethyl ketone (2-Buta	-	-	-	-	-	-	-	-
60-34-4	Methyl Hydrazine	-	-	-	-	-	-	-	-
108-10-1	Methyl isobutyl ketone (Hex	-	-	-	-	-	-	-	-
624-83-9	Methyl isocyanate	-	-	-	-	-	-	-	-
80-62-6	Methyl methacrylate	-	-	-	-	-	-	-	-
1634-04-4	Methyl tert butyl ether	-	-	-	-	-	-	-	-
56-49-5	Methylcholanthrene, 3-	-	-	-	-	-	-	-	-
3697-24-3	Methylchrysene, 5-	-	-	-	-	-	-	-	-
101-14-4	Methylene bis(2-chloroanilin	-	-	-	-	-	-	-	-
74-95-3	Methylene Bromide	-	-	-	-	-	-	-	-
75-09-2	Methylene chloride (Dichlor	-	-	-	-	-	-	-	-
101-68-8	Methylene diphenyl diisocya	-	-	-	-	-	-	-	-
101-77-9	Methylenedianiline, 4,4-	-	-	-	-	-	-	-	-
90-94-8	Michler's ketone	-	-	-	-	-	-	-	-
10595-95-6	N- Nitrosomethylethylamine	-	-	-	-	-	-	-	-
924-16-3	N-Nitrosodi-n-butylamine	-	-	-	-	-	-	-	-
621-64-7	N-Nitrosodi-n-propylamine	-	-	-	-	-	-	-	-
55-18-5	N-Nitrosodiethylamine	-	-	-	-	-	-	-	-
62-75-9	N-Nitrosodimethylamine	-	-	-	-	-	-	-	-
86-30-6	N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-
59-89-2	N-Nitrosomorpholine	-	-	-	-	-	-	-	-
100-75-4	N-Nitrosopiperidine	-	-	-	-	-	-	-	-

111-84-2	N-Nonane	-	-	-	-	-	-	-	-
64724-95-6	Naphtha, High Flash Aroma	-	-	-	-	-	-	-	-
91-20-3	Naphthalene	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
193-09-9	Naphtho[2,3-e]pyrene	-	-	-	-	-	-	-	-
7440-02-0	Nickel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NICKEL-COM	Nickel Compounds	-	-	-	-	-	-	-	-
1313-99-1	Nickel oxide	-	-	-	-	-	-	-	-
0-02-5	Nickel refinery dust from the	-	-	-	-	-	-	-	-
12035-72-2	Nickel sulfide (NI3S2)	-	-	-	-	-	-	-	-
7697-37-2	Nitric acid	-	-	-	-	-	-	-	-
139-13-9	Nitrilotriacetic acid	-	-	-	-	-	-	-	-
18662-53-8	Nitrilotriacetic acid, trisodiu	-	-	-	-	-	-	-	-
602-87-9	Nitroacenaphthene, 5-	-	-	-	-	-	-	-	-
88-74-4	Nitroaniline, 2-	-	-	-	-	-	-	-	-
100-01-6	Nitroaniline, 4-	-	-	-	-	-	-	-	-
98-95-3	Nitrobenzene	-	-	-	-	-	-	-	-
7496-02-8	Nitrochrysene, 6-	-	-	-	-	-	-	-	-
607-57-8	Nitrofluorene, 2-	-	-	-	-	-	-	-	-
10102-44-0	Nitrogen dioxide (NO2)	17.41	5.66	1.51	0.84	4.07	1.56	0.36	0.22
75-52-5	Nitromethane	-	-	-	-	-	-	-	-
79-46-9	Nitropropane, 2-	-	-	-	-	-	-	-	-
5522-43-0	Nitropyrene, 1-	-	-	-	-	-	-	-	-
57835-92-4	Nitropyrene, 4-	-	-	-	-	-	-	-	-
156-10-5	Nitrosodiphenylamine, p-	-	-	-	-	-	-	-	-
3268-87-9	Octachlorodibenzo-p-dioxin,	-	-	-	-	-	-	-	-
39001-02-0	Octachlorodibenzofuran, 1,2	-	-	-	-	-	-	-	-
10028-15-6	Ozone	-	-	-	-	-	-	-	-
74472-37-0	PCB 114 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
31508-00-6	PCB 118 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
65510-44-3	PCB 123 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
57465-28-8	PCB 126 (3,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
38380-0804	PCB 156 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Hep	-	-	-	-	-	-	-	-
32598-13-3	PCB 77 (3,3,4,4-Tetrachloro	-	-	-	-	-	-	-	-
70362-50-4	PCB 81 (3,4,4,5 Tetrachloro	-	-	-	-	-	-	-	-
32598-14-4	PCB105 (2,3,3,4,4 Pentachl	-	-	-	-	-	-	-	-
40321-76-4	Pentachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-1	Pentachlorodibenzodioxins,	-	-	-	-	-	-	-	-
57117-41-6	Pentachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
57117-31-4	Pentachlorodibenzofuran, 2	-	-	-	-	-	-	-	-
00-09-0	Pentachlorodibenzofurans,	-	-	-	-	-	-	-	-
87-86-5	Pentachlorophenol	-	-	-	-	-	-	-	-
109-66-0	Pentane, n-	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
85-01-8	Phenanthrene	-	-	-	-	-	-	-	-
108-95-2	Phenol	-	-	-	-	-	-	-	-
75-44-5	Phosgene	-	-	-	-	-	-	-	-
7803-51-2	Phosphine	-	-	-	-	-	-	-	-
7664-38-2	Phosphoric acid	-	-	-	-	-	-	-	-
85-44-9	Phthalic anhydride	-	-	-	-	-	-	-	-
59536-65-1	Polybrominated Biphenyls	-	-	-	-	-	-	-	-
1336-36-3	Polychlorinated biphenyls (A	-	-	-	-	-	-	-	-
00-08-0	Polychlorinated Dibenzo-P-	-	-	-	-	-	-	-	-
00-05-0	Polychlorinated Dibenzodio	-	-	-	-	-	-	-	-
00-05-1	Polychlorinated Dibenzofura	-	-	-	-	-	-	-	-
130498-29-2	Polycyclic Aromatic Hydroca	-	-	-	-	-	-	-	-
00-01-7	Polycyclic Organic Matter (P	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9016-87-9	Polymeric diphenylmethane	-	-	-	-	-	-	-	-
7758-01-2	Potassium bromate	-	-	-	-	-	-	-	-
1120-71-4	Propane sultone, 1,3-	-	-	-	-	-	-	-	-
57-57-8	Propiolactone, beta-	-	-	-	-	-	-	-	-
123-38-6	Propionaldehyde	-	-	-	-	-	-	-	-
115-07-1	Propylene	-	-	-	-	-	-	-	-
78-87-5	Propylene dichloride (1,2-Di	-	-	-	-	-	-	-	-
107-98-2	Propylene Glycol Monometh	-	-	-	-	-	-	-	-
75-56-9	Propylene oxide	-	-	-	-	-	-	-	-
930-55-2	Pyrrolidine, 1-Nitroso-	-	-	-	-	-	-	-	-
7782-49-2	Selenium	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0-01-9	Selenium Compounds	-	-	-	-	-	-	-	-
7631-86-9	Silica (crystalline, respirable	-	-	-	-	-	-	-	-
1310-73-2	Sodium hydroxide	-	-	-	-	-	-	-	-
10588-01-9	Sodium Dichromate	-	-	-	-	-	-	-	-
7789-06-2	Strontium chromate	-	-	-	-	-	-	-	-
100-42-5	Styrene	-	-	-	-	-	-	-	-
96-09-3	Styrene oxide	-	-	-	-	-	-	-	-
14808-79-8	Sulfates	-	-	-	-	-	-	-	-
126-33-0	Sulfolane	-	-	-	-	-	-	-	-
7446-09-5	Sulfur dioxide	0.10	0.03	0.01	0.01	0.02	0.01	0.00	0.00
7664-93-9	Sulfuric acid (aerosol forms	-	-	-	-	-	-	-	-
8014-95-7	Sulfuric Acid mixture w. sulf	-	-	-	-	-	-	-	-
00-09-1	TCDD Eqivalents, 2,3,7,8-	-	-	-	-	-	-	-	-
540-88-5	Tert-Butyl Acetate	-	-	-	-	-	-	-	-
1746-01-6	Tetrachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-8	Tetrachlorodibenzodioxins,	-	-	-	-	-	-	-	-
51207-31-9	Tetrachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-

00-08-6	Tetrachlorodibenzofurans, A	-	-	-	-	-	-	-	-
630-20-6	Tetrachloroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
79-34-5	Tetrachloroethane, 1,1,2,2-	-	-	-	-	-	-	-	-
127-18-4	Tetrachloroethylene (Perchl	-	-	-	-	-	-	-	-
811-97-2	Tetrafluoroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
109-99-9	Tetrahydrofuran	-	-	-	-	-	-	-	-
62-55-5	Thioacetamide	-	-	-	-	-	-	-	-
62-56-6	Thiourea	-	-	-	-	-	-	-	-
108-88-3	Toluene	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
584-84-9	Toluene-2,4-diisocyanate	-	-	-	-	-	-	-	-
91-08-7	Toluene-2,6-diisocyanate	-	-	-	-	-	-	-	-
95-80-7	Toluene diamine, 2,4-	-	-	-	-	-	-	-	-
26471-62-5	Toluenediisocyanate (mixed	-	-	-	-	-	-	-	-
95-53-4	Toluidine, o- (Methylaniline,	-	-	-	-	-	-	-	-
8001-35-2	Toxaphene (chlorinated ca	-	-	-	-	-	-	-	-
10061-02-6	trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-
120-82-1	Trichlorobenzene, 1,2,4-	-	-	-	-	-	-	-	-
79-00-5	Trichloroethane, 1,1,2-	-	-	-	-	-	-	-	-
79-01-6	Trichloroethylene (TCE)	-	-	-	-	-	-	-	-
75-69-4	Trichlorofluoromethane (CF	-	-	-	-	-	-	-	-
88-06-2	Trichlorophenol, 2,4,6-	-	-	-	-	-	-	-	-
96-18-4	Trichloropropane, 1,2,3-	-	-	-	-	-	-	-	-
96-19-5	Trichloropropene, 1,2,3-	-	-	-	-	-	-	-	-
76-13-1	Trichlorotrifluoroethane, 1,1	-	-	-	-	-	-	-	-
121-44-8	Triethylamine	-	-	-	-	-	-	-	-
420-46-2	Trifluoroethane, 1,1,1-	-	-	-	-	-	-	-	-
526-73-8	Trimethylbenzene, 1,2,3-	-	-	-	-	-	-	-	-
95-63-6	Trimethylbenzene, 1,2,4-	-	-	-	-	-	-	-	-
108-67-8	Trimethylbenzene, 1,3,5-	-	-	-	-	-	-	-	-
URANIUM-SO	Uranium (Soluble Salts)	-	-	-	-	-	-	-	-
7440-61-1	Uranium, Insoluble Compou	-	-	-	-	-	-	-	-
7440-62-2	Vanadium and Compounds	-	-	-	-	-	-	-	-
1314-62-1	Vanadium Pentoxide, (V2O	-	-	-	-	-	-	-	-
108-05-4	Vinyl acetate	-	-	-	-	-	-	-	-
593-60-2	Vinyl bromide	-	-	-	-	-	-	-	-
75-01-4	Vinyl chloride	-	-	-	-	-	-	-	-
1330-20-7	Xylenes	-	-	-	-	-	-	-	-
108-38-3	Xylenes, m-	-	-	-	-	-	-	-	-
95-47-6	Xylenes, o-	-	-	-	-	-	-	-	-
106-42-3	Xylenes, p-	-	-	-	-	-	-	-	-
13530-65-9	Zinc chromate	-	-	-	-	-	-	-	-

RASS version: 2020-12

No inputs needed on this page

Air Concentrations in ug/m3

		Stack #48				Stack #49			
CAS# or MPCA#	**Chemical Name**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**
202-94-8	11H-Benz[b,c]aceanthrylene	-	-	-	-	-	-	-	-
202-98-2	4H-Cyclopenta[d,e,f]chrysen	-	-	-	-	-	-	-	-
75-07-0	Acetaldehyde	-	-	-	-	-	-	-	-
60-35-5	Acetamide	-	-	-	-	-	-	-	-
67-64-1	Acetone	-	-	-	-	-	-	-	-
75-86-5	Acetone Cyanohydrin	-	-	-	-	-	-	-	-
75-05-8	Acetonitrile	-	-	-	-	-	-	-	-
53-96-3	Acetylaminofluorene, 2-	-	-	-	-	-	-	-	-
107-02-8	Acrolein	-	-	-	-	-	-	-	-
79-06-1	Acrylamide	-	-	-	-	-	-	-	-
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-	-	-	-	-	-	-	-	-
79-10-7	Acrylic acid	-	-	-	-	-	-	-	-
107-13-1	Acrylonitrile	-	-	-	-	-	-	-	-
111-69-3	Adiponitrile	-	-	-	-	-	-	-	-
ALDEHYDES	Aldehydes	-	-	-	-	-	-	-	-
309-00-2	Aldrin	-	-	-	-	-	-	-	-
ALIPHATIC-M	Aliphatic Hydrocarbon Strea	-	-	-	-	-	-	-	-
107-05-1	Allyl chloride	-	-	-	-	-	-	-	-
7429-90-5	Aluminum	-	-	-	-	-	-	-	-
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3	-	-	-	-	-	-	-	-
6109-97-3	Amino-9-ethylcarbazolehydr	-	-	-	-	-	-	-	-
117-79-3	Aminoanthraquinone, 2-	-	-	-	-	-	-	-	-
7664-41-7	Ammonia	-	-	-	-	-	-	-	-
62-53-3	Aniline	-	-	-	-	-	-	-	-
191-26-4	Anthanthrene	-	-	-	-	-	-	-	-
7440-36-0	Antimony	-	-	-	-	-	-	-	-
ANTIMONY-C	Antimony Compounds	-	-	-	-	-	-	-	-
1309-64-4	Antimony trioxide	-	-	-	-	-	-	-	-
140-57-8	Aramite	-	-	-	-	-	-	-	-
7440-38-2	Arsenic	0.00	0.00	0.00	0.00	-	-	-	-
ARSENIC-CO	Arsenic Compounds	-	-	-	-	-	-	-	-
1327-53-3	Arsenic Trioxide	-	-	-	-	-	-	-	-
7784-42-1	Arsine	-	-	-	-	-	-	-	-
1332-21-4	Asbestos (units in fibers)	-	-	-	-	-	-	-	-
1332-21-4-LA	Asbestos, Libby Amphibole	-	-	-	-	-	-	-	-
123-77-3	Azodicarbonamide	-	-	-	-	-	-	-	-
10294-40-3	Barium Chromate	-	-	-	-	-	-	-	-
199-54-2	Benz[e]aceanthrylene	-	-	-	-	-	-	-	-
202-33-5	Benz[j]aceanthrylene	-	-	-	-	-	-	-	-
211-91-6	Benz[l]aceanthrylene	-	-	-	-	-	-	-	-
71-43-2	Benzene	0.00	0.00	0.00	0.00	-	-	-	-
92-87-5	Benzidine	-	-	-	-	-	-	-	-
205-82-3	Benzo(j)fluoranthene	-	-	-	-	-	-	-	-
207-08-9	Benzo(k)fluoranthene	-	-	-	-	-	-	-	-
56-55-3	Benzo[a]anthracene	-	-	-	-	-	-	-	-
50-32-8	Benzo[a]pyrene	-	-	-	-	-	-	-	-
205-99-2	Benzo[b]fluoranthene	-	-	-	-	-	-	-	-
205-12-9	Benzo[c]fluorene	-	-	-	-	-	-	-	-
191-24-2	Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-
65-85-0	Benzoic Acid	-	-	-	-	-	-	-	-
100-44-7	Benzyl chloride	-	-	-	-	-	-	-	-
7440-41-7	Beryllium	0.00	0.00	0.00	0.00	-	-	-	-
BERYLLIUM-	Beryllium Compounds	-	-	-	-	-	-	-	-
13510-49-1	Beryllium sulfate	-	-	-	-	-	-	-	-
111-44-4	Bis(2-chloroethyl)ether	-	-	-	-	-	-	-	-
117-81-7	Bis(2-ethylhexyl)phthalate (	-	-	-	-	-	-	-	-
542-88-1	Bis(chloromethyl)ether	-	-	-	-	-	-	-	-
7440-42-8	Boron And Borates Only	-	-	-	-	-	-	-	-
10294-34-5	Boron Trichloride	-	-	-	-	-	-	-	-
7637-07-2	Boron Trifluoride	-	-	-	-	-	-	-	-
108-86-1	Bromobenzene	-	-	-	-	-	-	-	-
74-97-5	Bromochloromethane	-	-	-	-	-	-	-	-
75-27-4	Bromodichloromethane	-	-	-	-	-	-	-	-
75-25-2	Bromoform	-	-	-	-	-	-	-	-
74-83-9	Bromomethane	-	-	-	-	-	-	-	-
106-94-5	Bromopropane, 1-	-	-	-	-	-	-	-	-
106-99-0	Butadiene, 1,3-	-	-	-	-	-	-	-	-
78-92-2	Butyl alcohol, sec-	-	-	-	-	-	-	-	-
111-76-2	Butyl Cellosolve (ethylene g	-	-	-	-	-	-	-	-
25013-16-5	Butylated hydroxyanisole	-	-	-	-	-	-	-	-
3068-88-0	Butyrolactone, beta-	-	-	-	-	-	-	-	-
7440-43-9	Cadmium	0.00	0.00	0.00	0.00	-	-	-	-
CADMIUM-CO	Cadmium Compounds	-	-	-	-	-	-	-	-
13765-19-0	Calcium Chromate	-	-	-	-	-	-	-	-
105-60-2	Caprolactum	-	-	-	-	-	-	-	-
75-15-0	Carbon disulfide	-	-	-	-	-	-	-	-
630-08-0	Carbon Monoxide	2.07	0.75	0.19	0.11	-	-	-	-
56-23-5	Carbon tetrachloride	-	-	-	-	-	-	-	-
463-58-1	Carbonyl sulfide	-	-	-	-	-	-	-	-
111-15-9	Cellosolve Acetate (ethylen	-	-	-	-	-	-	-	-
1306-38-3	Cerium Oxide and Cerium C	-	-	-	-	-	-	-	-
12789-03-6	Chlordane or (57-74-9)	-	-	-	-	-	-	-	-
115-28-6	Chlorendic acid	-	-	-	-	-	-	-	-
108171-26-2	Chlorinated Paraffins (C12,	-	-	-	-	-	-	-	-
7782-50-5	Chlorine	-	-	-	-	-	-	-	-

10049-04-4	Chlorine Oxide (CLO2)	-	-	-	-	-	-	-	-
75-68-3	Chloro-1,1-difluoroethane, 1	-	-	-	-	-	-	-	-
563-47-3	Chloro-2-methylpropene, 3-	-	-	-	-	-	-	-	-
95-83-0	Chloro-o-phenylenediamine	-	-	-	-	-	-	-	-
95-69-2	Chloro-o-toluidine, p-	-	-	-	-	-	-	-	-
532-27-4	Chloroacetophenone, 2-	-	-	-	-	-	-	-	-
108-90-7	Chlorobenzene	-	-	-	-	-	-	-	-
98-56-6	Chlorobenzotrifluoride, 4-	-	-	-	-	-	-	-	-
75-45-6	Chlorodifluoromethane (HC	-	-	-	-	-	-	-	-
67-66-3	Chloroform	-	-	-	-	-	-	-	-
107-30-2	Chloromethyl Methyl Ether	-	-	-	-	-	-	-	-
88-73-3	Chloronitrobenzene, o-	-	-	-	-	-	-	-	-
100-00-5	Chloronitrobenzene, p-	-	-	-	-	-	-	-	-
76-06-2	Chloropicrin	-	-	-	-	-	-	-	-
126-99-8	Chloroprene	-	-	-	-	-	-	-	-
1333-82-0	Chromic acid mists and diss	-	-	-	-	-	-	-	-
7440-47-3	Chromium	-	-	-	-	-	-	-	-
18540-29-9	Chromium (Hexavalent)	0.00	0.00	0.00	0.00	-	-	-	-
18540-29-9-p	Chromium (Hexavalent) - P	-	-	-	-	-	-	-	-
CHROM-COM	Chromium Compounds	-	-	-	-	-	-	-	-
16065-83-1	Chromium(III) Compounds	0.00	0.00	0.00	0.00	-	-	-	-
218-01-9	Chrysene (Benzo(a)phenan	-	-	-	-	-	-	-	-
87-29-6	Cinnamyl anthranilate	-	-	-	-	-	-	-	-
10061-01-5	cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-
8007-45-2	Coal Tar	-	-	-	-	-	-	-	-
7440-48-4	Cobalt	0.00	0.00	0.00	0.00	-	-	-	-
0-00-7	Coke Oven Emissions	-	-	-	-	-	-	-	-
7440-50-8	Copper	-	-	-	-	-	-	-	-
COPPER-CO	Copper Compounds	-	-	-	-	-	-	-	-
120-71-8	Cresidine, p-	-	-	-	-	-	-	-	-
108-39-4	Cresol, m-	-	-	-	-	-	-	-	-
95-48-7	Cresol, o-	-	-	-	-	-	-	-	-
106-44-5	Cresol, p-	-	-	-	-	-	-	-	-
1319-77-3	Cresols/Cresylic acid (isome	-	-	-	-	-	-	-	-
98-82-8	Cumene	-	-	-	-	-	-	-	-
135-20-6	Cupferron	-	-	-	-	-	-	-	-
57-12-5	Cyanide (Cyanide ion, Inorg	-	-	-	-	-	-	-	-
CYANIDE-CO	Cyanide Compounds	-	-	-	-	-	-	-	-
110-82-7	Cyclohexane	-	-	-	-	-	-	-	-
108-94-1	Cyclohexanone	-	-	-	-	-	-	-	-
27208-37-3	Cyclopenta[c,d]pyrene	-	-	-	-	-	-	-	-
50-29-3	DDT	-	-	-	-	-	-	-	-
615-05-4	Diaminoanisole, 2,4-	-	-	-	-	-	-	-	-
101-80-4	Diaminodiphenyl ether, 4,4-	-	-	-	-	-	-	-	-
103-33-3	Diazene, Diphenyl	-	-	-	-	-	-	-	-
226-36-8	Dibenz(a,h)acridine	-	-	-	-	-	-	-	-
224-42-0	Dibenz(a,j)acridine	-	-	-	-	-	-	-	-
53-70-3	Dibenz[a,h]anthracene	-	-	-	-	-	-	-	-
192-65-4	Dibenzo(a,e)pyrene	-	-	-	-	-	-	-	-
189-64-0	Dibenzo(a,h)pyrene	-	-	-	-	-	-	-	-
191-30-0	Dibenzo(a,l)pyrene	-	-	-	-	-	-	-	-
194-59-2	Dibenzo(c,g)carbazole, 7H-	-	-	-	-	-	-	-	-
5385-75-1	Dibenzo[a,e]fluoranthene	-	-	-	-	-	-	-	-
189-55-9	Dibenzo[a,i]pyrene	-	-	-	-	-	-	-	-
96-12-8	Dibromo-3-chloropropane, 1	-	-	-	-	-	-	-	-
764-41-0	Dichloro-2-butene, 1,4-	-	-	-	-	-	-	-	-
1476-11-5	Dichloro-2-butene, cis-1,4-	-	-	-	-	-	-	-	-
106-46-7	Dichlorobenzene(p), 1,4-	-	-	-	-	-	-	-	-
25321-22-6	Dichlorobenzenes	0.00	0.00	0.00	0.00	-	-	-	-
91-94-1	Dichlorobenzidene, 3,3-	-	-	-	-	-	-	-	-
75-71-8	Dichlorodifluoromethane (C	-	-	-	-	-	-	-	-
75-35-4	Dichloroethylene (1,1-) (Vin	-	-	-	-	-	-	-	-
156-60-5	Dichloroethylene, trans-1,2-	-	-	-	-	-	-	-	-
542-75-6	Dichloropropene, 1,3-	-	-	-	-	-	-	-	-
78-88-6	Dichloropropene, 2,3-	-	-	-	-	-	-	-	-
62-73-7	Dichlorvos	-	-	-	-	-	-	-	-
77-73-6	Dicyclopentadiene	-	-	-	-	-	-	-	-
60-57-1	Dieldrin	-	-	-	-	-	-	-	-
0-02-4	Diesel exhaust particulate	-	-	-	-	-	-	-	-
111-42-2	Diethanolamine	-	-	-	-	-	-	-	-
112-34-5	Diethylene Glycol Monobuty	-	-	-	-	-	-	-	-
111-90-0	Diethylene Glycol Monoethy	-	-	-	-	-	-	-	-
75-37-6	Difluoroethane, 1,1-	-	-	-	-	-	-	-	-
108-20-3	Diisopropyl Ether	-	-	-	-	-	-	-	-
60-11-7	Dimethyl aminoazobenzene	-	-	-	-	-	-	-	-
68-12-2	Dimethyl formamide	-	-	-	-	-	-	-	-
108-01-0	Dimethylamino ethanol, 2-	-	-	-	-	-	-	-	-
57-97-6	Dimethylbenz[a]anthracene,	-	-	-	-	-	-	-	-
57-14-7	Dimethylhydrazine, 1,1-	-	-	-	-	-	-	-	-
42397-64-8	Dinitropyrene, 1,6- (BaP)	-	-	-	-	-	-	-	-
42397-65-9	Dinitropyrene, 1,8- (BaP)	-	-	-	-	-	-	-	-
121-14-2	Dinitrotoluene, 2,4-	-	-	-	-	-	-	-	-
123-91-1	Dioxane, 1,4- (1,4-Diethylen	-	-	-	-	-	-	-	-
122-66-7	Diphenylhydrazine, 1,2-	-	-	-	-	-	-	-	-
106-89-8	Epichlorohydrin (l-Chloro-2,	-	-	-	-	-	-	-	-
106-88-7	Epoxybutane, 1,2-	-	-	-	-	-	-	-	-
110-80-5	Ethoxyethanol, 2- (ethylene	-	-	-	-	-	-	-	-
141-78-6	Ethyl acetate	-	-	-	-	-	-	-	-
140-88-5	Ethyl Acrylate	-	-	-	-	-	-	-	-
100-41-4	Ethyl benzene	-	-	-	-	-	-	-	-
51-79-6	Ethyl carbamate (Urethane)	-	-	-	-	-	-	-	-

75-00-3	Ethyl chloride (Chloroethane	-	-	-	-	-	-	-	-
97-63-2	Ethyl Methacrylate	-	-	-	-	-	-	-	-
106-93-4	Ethylene dibromide (Dibrom	-	-	-	-	-	-	-	-
107-06-2	Ethylene dichloride (1,2-Dic	-	-	-	-	-	-	-	-
107-21-1	Ethylene glycol	-	-	-	-	-	-	-	-
75-21-8	Ethylene oxide	-	-	-	-	-	-	-	-
96-45-7	Ethylene thiourea	-	-	-	-	-	-	-	-
75-34-3	Ethylidene dichloride (1,1-D	-	-	-	-	-	-	-	-
206-44-0	Fluoranthene	-	-	-	-	-	-	-	-
FLUORIDES	Fluorides (except hydrogen	-	-	-	-	-	-	-	-
50-00-0	Formaldehyde	0.00	0.00	0.00	0.00	-	-	-	-
64-18-6	Formic Acid	-	-	-	-	-	-	-	-
111-30-8	Glutaraldehyde	-	-	-	-	-	-	-	-
0-01-2	Glycol ethers	-	-	-	-	-	-	-	-
76-44-8	Heptachlor	-	-	-	-	-	-	-	-
1024-57-3	Heptachlor epoxide	-	-	-	-	-	-	-	-
35822-46-9	Heptachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-5	Heptachlorodibenzodioxin,	-	-	-	-	-	-	-	-
67562-39-4	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
55673-89-7	Heptachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
00-08-4	Heptachlorodibenzofuran, A	-	-	-	-	-	-	-	-
142-82-5	Heptane, N	-	-	-	-	-	-	-	-
118-74-1	Hexachlorobenzene	-	-	-	-	-	-	-	-
87-68-3	Hexachlorobutadiene	-	-	-	-	-	-	-	-
608-73-1	Hexachlorocyclohexane (tec	-	-	-	-	-	-	-	-
319-84-6	Hexachlorocyclohexane, alp	-	-	-	-	-	-	-	-
319-85-7	Hexachlorocyclohexane, be	-	-	-	-	-	-	-	-
77-47-4	Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-
39227-28-6	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
57653-85-7	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
19408-74-3	Hexachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-3	Hexachlorodibenzodioxins,	-	-	-	-	-	-	-	-
70648-26-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
57117-44-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
72918-21-9	Hexachlorodibenzofuran, 1,	-	-	-	-	-	-	-	-
60851-34-5	Hexachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-
00-08-2	Hexachlorodibenzofurans, A	-	-	-	-	-	-	-	-
67-72-1	Hexachloroethane	-	-	-	-	-	-	-	-
822-06-0	Hexamethylene-1,6-diisocya	-	-	-	-	-	-	-	-
110-54-3	Hexane	0.04	0.02	0.00	0.00	-	-	-	-
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl	-	-	-	-	-	-	-	-
591-78-6	Hexanone-2	-	-	-	-	-	-	-	-
302-01-2	Hydrazine	-	-	-	-	-	-	-	-
10034-93-2	Hydrazine sulfate	-	-	-	-	-	-	-	-
7647-01-0	Hydrochloric acid (hydrogen	-	-	-	-	-	-	-	-
74-90-8	Hydrogen cyanide	-	-	-	-	-	-	-	-
7664-39-3	Hydrogen fluoride (Hydroflu	-	-	-	-	-	-	-	-
7783-07-5	Hydrogen selenide	-	-	-	-	-	-	-	-
7783-06-4	Hydrogen sulfide	-	-	-	-	-	-	-	-
193-39-5	Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	-
5888-33-5	Isobornyl acrylate	-	-	-	-	-	-	-	-
78-59-1	Isophorone	-	-	-	-	-	-	-	-
67-63-0	Isopropyl alcohol	-	-	-	-	-	-	-	-
7439-92-1	Lead	-	-	-	-	-	-	-	-
7758-97-6	Lead Chromate	-	-	-	-	-	-	-	-
LEAD-COMP	Lead Compounds	-	-	-	-	-	-	-	-
58-89-9	Lindane (all isomers)	-	-	-	-	-	-	-	-
108-31-6	Maleic anhydride	-	-	-	-	-	-	-	-
7439-96-5	Manganese	0.00	0.00	0.00	0.00	-	-	-	-
MANGANESE	Manganese Compounds	-	-	-	-	-	-	-	-
7439-97-6	Mercury (elemental)	0.00	0.00	0.00	0.00	-	-	-	-
MERCURY-C	Mercury Compounds	-	-	-	-	-	-	-	-
126-98-7	Methacrylonitrile	-	-	-	-	-	-	-	-
67-56-1	Methanol	-	-	-	-	-	-	-	-
109-86-4	Methoxyethanol, 2- (ethylen	-	-	-	-	-	-	-	-
96-33-3	Methyl acrylate	-	-	-	-	-	-	-	-
110-49-6	Methyl Cellosolve Acetate	-	-	-	-	-	-	-	-
74-87-3	Methyl chloride (Chlorometh	-	-	-	-	-	-	-	-
71-55-6	Methyl chloroform (1,1,1-Tri	-	-	-	-	-	-	-	-
78-93-3	Methyl ethyl ketone (2-Buta	-	-	-	-	-	-	-	-
60-34-4	Methyl Hydrazine	-	-	-	-	-	-	-	-
108-10-1	Methyl isobutyl ketone (Hex	-	-	-	-	-	-	-	-
624-83-9	Methyl isocyanate	-	-	-	-	-	-	-	-
80-62-6	Methyl methacrylate	-	-	-	-	-	-	-	-
1634-04-4	Methyl tert butyl ether	-	-	-	-	-	-	-	-
56-49-5	Methylcholanthrene, 3-	-	-	-	-	-	-	-	-
3697-24-3	Methylchrysene, 5-	-	-	-	-	-	-	-	-
101-14-4	Methylene bis(2-chloroanilin	-	-	-	-	-	-	-	-
74-95-3	Methylene Bromide	-	-	-	-	-	-	-	-
75-09-2	Methylene chloride (Dichlor	-	-	-	-	-	-	-	-
101-68-8	Methylene diphenyl diisocya	-	-	-	-	-	-	-	-
101-77-9	Methylenedianiline, 4,4-	-	-	-	-	-	-	-	-
90-94-8	Michler's ketone	-	-	-	-	-	-	-	-
10595-95-6	N- Nitrosomethylethylamine	-	-	-	-	-	-	-	-
924-16-3	N-Nitrosodi-n-butylamine	-	-	-	-	-	-	-	-
621-64-7	N-Nitrosodi-n-propylamine	-	-	-	-	-	-	-	-
55-18-5	N-Nitrosodiethylamine	-	-	-	-	-	-	-	-
62-75-9	N-Nitrosodimethylamine	-	-	-	-	-	-	-	-
86-30-6	N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-
59-89-2	N-Nitrosomorpholine	-	-	-	-	-	-	-	-
100-75-4	N-Nitrosopiperidine	-	-	-	-	-	-	-	-

111-84-2	N-Nonane	-	-	-	-	-	-	-	-
64724-95-6	Naphtha, High Flash Aroma	-	-	-	-	-	-	-	-
91-20-3	Naphthalene	0.00	0.00	0.00	0.00	-	-	-	-
193-09-9	Naphtho[2,3-e]pyrene	-	-	-	-	-	-	-	-
7440-02-0	Nickel	0.00	0.00	0.00	0.00	-	-	-	-
NICKEL-COM	Nickel Compounds	-	-	-	-	-	-	-	-
1313-99-1	Nickel oxide	-	-	-	-	-	-	-	-
0-02-5	Nickel refinery dust from the	-	-	-	-	-	-	-	-
12035-72-2	Nickel sulfide (NI3S2)	-	-	-	-	-	-	-	-
7697-37-2	Nitric acid	-	-	-	-	-	-	-	-
139-13-9	Nitrilotriacetic acid	-	-	-	-	-	-	-	-
18662-53-8	Nitrilotriacetic acid, trisodiu	-	-	-	-	-	-	-	-
602-87-9	Nitroacenaphthene, 5-	-	-	-	-	-	-	-	-
88-74-4	Nitroaniline, 2-	-	-	-	-	-	-	-	-
100-01-6	Nitroaniline, 4-	-	-	-	-	-	-	-	-
98-95-3	Nitrobenzene	-	-	-	-	-	-	-	-
7496-02-8	Nitrochrysene, 6-	-	-	-	-	-	-	-	-
607-57-8	Nitrofluorene, 2-	-	-	-	-	-	-	-	-
10102-44-0	Nitrogen dioxide (NO2)	2.47	0.90	0.22	0.13	-	-	-	-
75-52-5	Nitromethane	-	-	-	-	-	-	-	-
79-46-9	Nitropropane, 2-	-	-	-	-	-	-	-	-
5522-43-0	Nitropyrene, 1-	-	-	-	-	-	-	-	-
57835-92-4	Nitropyrene, 4-	-	-	-	-	-	-	-	-
156-10-5	Nitrosodiphenylamine, p-	-	-	-	-	-	-	-	-
3268-87-9	Octachlorodibenzo-p-dioxin,	-	-	-	-	-	-	-	-
39001-02-0	Octachlorodibenzofuran, 1,2	-	-	-	-	-	-	-	-
10028-15-6	Ozone	-	-	-	-	-	-	-	-
74472-37-0	PCB 114 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
31508-00-6	PCB 118 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
65510-44-3	PCB 123 (2,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
57465-28-8	PCB 126 (3,3,4,4,5 Pentach	-	-	-	-	-	-	-	-
38380-0804	PCB 156 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexac	-	-	-	-	-	-	-	-
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexac	-	-	-	-	-	-	-	-
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Hep	-	-	-	-	-	-	-	-
32598-13-3	PCB 77 (3,3,4,4-Tetrachloro	-	-	-	-	-	-	-	-
70362-50-4	PCB 81 (3,4,4,5 Tetrachloro	-	-	-	-	-	-	-	-
32598-14-4	PCB105 (2,3,3,4,4 Pentachl	-	-	-	-	-	-	-	-
40321-76-4	Pentachlorodibenzo-p-dioxi	-	-	-	-	-	-	-	-
00-08-1	Pentachlorodibenzodioxins,	-	-	-	-	-	-	-	-
57117-41-6	Pentachlorodibenzofuran, 1	-	-	-	-	-	-	-	-
57117-31-4	Pentachlorodibenzofuran, 2	-	-	-	-	-	-	-	-
00-09-0	Pentachlorodibenzofurans,	-	-	-	-	-	-	-	-
87-86-5	Pentachlorophenol	-	-	-	-	-	-	-	-
109-66-0	Pentane, n-	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	9.69	3.40	1.36	0.91
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-	-	-	-	-
85-01-8	Phenanthrene	-	-	-	-	-	-	-	-
108-95-2	Phenol	-	-	-	-	-	-	-	-
75-44-5	Phosgene	-	-	-	-	-	-	-	-
7803-51-2	Phosphine	-	-	-	-	-	-	-	-
7664-38-2	Phosphoric acid	-	-	-	-	-	-	-	-
85-44-9	Phthalic anhydride	-	-	-	-	-	-	-	-
59536-65-1	Polybrominated Biphenyls	-	-	-	-	-	-	-	-
1336-36-3	Polychlorinated biphenyls (A	-	-	-	-	-	-	-	-
00-08-0	Polychlorinated Dibenzo-P-	-	-	-	-	-	-	-	-
00-05-0	Polychlorinated Dibenzodio	-	-	-	-	-	-	-	-
00-05-1	Polychlorinated Dibenzofura	-	-	-	-	-	-	-	-
130498-29-2	Polycyclic Aromatic Hydroca	-	-	-	-	-	-	-	-
00-01-7	Polycyclic Organic Matter (P	0.00	0.00	0.00	0.00	-	-	-	-
9016-87-9	Polymeric diphenylmethane	-	-	-	-	-	-	-	-
7758-01-2	Potassium bromate	-	-	-	-	-	-	-	-
1120-71-4	Propane sultone, 1,3-	-	-	-	-	-	-	-	-
57-57-8	Propiolactone, beta-	-	-	-	-	-	-	-	-
123-38-6	Propionaldehyde	-	-	-	-	-	-	-	-
115-07-1	Propylene	-	-	-	-	-	-	-	-
78-87-5	Propylene dichloride (1,2-Di	-	-	-	-	-	-	-	-
107-98-2	Propylene Glycol Monometh	-	-	-	-	-	-	-	-
75-56-9	Propylene oxide	-	-	-	-	-	-	-	-
930-55-2	Pyrrolidine, 1-Nitroso-	-	-	-	-	-	-	-	-
7782-49-2	Selenium	0.00	0.00	0.00	0.00	-	-	-	-
0-01-9	Selenium Compounds	-	-	-	-	-	-	-	-
7631-86-9	Silica (crystalline, respirable	-	-	-	-	-	-	-	-
1310-73-2	Sodium hydroxide	-	-	-	-	-	-	-	-
10588-01-9	Sodium Dichromate	-	-	-	-	-	-	-	-
7789-06-2	Strontium chromate	-	-	-	-	-	-	-	-
100-42-5	Styrene	-	-	-	-	-	-	-	-
96-09-3	Styrene oxide	-	-	-	-	-	-	-	-
14808-79-8	Sulfates	-	-	-	-	-	-	-	-
126-33-0	Sulfolane	-	-	-	-	-	-	-	-
7446-09-5	Sulfur dioxide	0.01	0.01	0.00	0.00	-	-	-	-
7664-93-9	Sulfuric acid (aerosol forms	-	-	-	-	-	-	-	-
8014-95-7	Sulfuric Acid mixture w. sulf	-	-	-	-	-	-	-	-
00-09-1	TCDD Eqivalents, 2,3,7,8-	-	-	-	-	-	-	-	-
540-88-5	Tert-Butyl Acetate	-	-	-	-	-	-	-	-
1746-01-6	Tetrachlorodibenzo-p-dioxin	-	-	-	-	-	-	-	-
00-08-8	Tetrachlorodibenzodioxins,	-	-	-	-	-	-	-	-
51207-31-9	Tetrachlorodibenzofuran, 2,	-	-	-	-	-	-	-	-

00-08-6	Tetrachlorodibenzofurans, A	-	-	-	-	-	-	-	-
630-20-6	Tetrachloroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
79-34-5	Tetrachloroethane, 1,1,2,2-	-	-	-	-	-	-	-	-
127-18-4	Tetrachloroethylene (Perchl	-	-	-	-	-	-	-	-
811-97-2	Tetrafluoroethane, 1,1,1,2-	-	-	-	-	-	-	-	-
109-99-9	Tetrahydrofuran	-	-	-	-	-	-	-	-
62-55-5	Thioacetamide	-	-	-	-	-	-	-	-
62-56-6	Thiourea	-	-	-	-	-	-	-	-
108-88-3	Toluene	0.00	0.00	0.00	0.00	-	-	-	-
584-84-9	Toluene-2,4-diisocyanate	-	-	-	-	-	-	-	-
91-08-7	Toluene-2,6-diisocyanate	-	-	-	-	-	-	-	-
95-80-7	Toluene diamine, 2,4-	-	-	-	-	-	-	-	-
26471-62-5	Toluenediisocyanate (mixed	-	-	-	-	-	-	-	-
95-53-4	Toluidine, o- (Methylaniline,	-	-	-	-	-	-	-	-
8001-35-2	Toxaphene (chlorinated ca	-	-	-	-	-	-	-	-
10061-02-6	trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-
120-82-1	Trichlorobenzene, 1,2,4-	-	-	-	-	-	-	-	-
79-00-5	Trichloroethane, 1,1,2-	-	-	-	-	-	-	-	-
79-01-6	Trichloroethylene (TCE)	-	-	-	-	-	-	-	-
75-69-4	Trichlorofluoromethane (CF	-	-	-	-	-	-	-	-
88-06-2	Trichlorophenol, 2,4,6-	-	-	-	-	-	-	-	-
96-18-4	Trichloropropane, 1,2,3-	-	-	-	-	-	-	-	-
96-19-5	Trichloropropene, 1,2,3-	-	-	-	-	-	-	-	-
76-13-1	Trichlorotrifluoroethane, 1,1	-	-	-	-	-	-	-	-
121-44-8	Triethylamine	-	-	-	-	-	-	-	-
420-46-2	Trifluoroethane, 1,1,1-	-	-	-	-	-	-	-	-
526-73-8	Trimethylbenzene, 1,2,3-	-	-	-	-	-	-	-	-
95-63-6	Trimethylbenzene, 1,2,4-	-	-	-	-	-	-	-	-
108-67-8	Trimethylbenzene, 1,3,5-	-	-	-	-	-	-	-	-
URANIUM-SO	Uranium (Soluble Salts)	-	-	-	-	-	-	-	-
7440-61-1	Uranium, Insoluble Compou	-	-	-	-	-	-	-	-
7440-62-2	Vanadium and Compounds	-	-	-	-	-	-	-	-
1314-62-1	Vanadium Pentoxide, (V2O	-	-	-	-	-	-	-	-
108-05-4	Vinyl acetate	-	-	-	-	-	-	-	-
593-60-2	Vinyl bromide	-	-	-	-	-	-	-	-
75-01-4	Vinyl chloride	-	-	-	-	-	-	-	-
1330-20-7	Xylenes	-	-	-	-	-	-	-	-
108-38-3	Xylenes, m-	-	-	-	-	-	-	-	-
95-47-6	Xylenes, o-	-	-	-	-	-	-	-	-
106-42-3	Xylenes, p-	-	-	-	-	-	-	-	-
13530-65-9	Zinc chromate	-	-	-	-	-	-	-	-

RASS version: 2020-12

No inputs needed on this page

Air Concentrations in ug/m3

		Stack #50			
CAS# or MPCA#	**Chemical Name**	**C(1-hr)**	**C(24-hr)**	**C(monthly)**	**C(annual)**
202-94-8	11H-Benz[b,c]aceanthrylene	-	-	-	-
202-98-2	4H-Cyclopenta[d,e,f]chrysen	-	-	-	-
75-07-0	Acetaldehyde	-	-	-	-
60-35-5	Acetamide	-	-	-	-
67-64-1	Acetone	-	-	-	-
75-86-5	Acetone Cyanohydrin	-	-	-	-
75-05-8	Acetonitrile	-	-	-	-
53-96-3	Acetylaminofluorene, 2-	-	-	-	-
107-02-8	Acrolein	-	-	-	-
79-06-1	Acrylamide	-	-	-	-
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-	-	-	-	-
79-10-7	Acrylic acid	-	-	-	-
107-13-1	Acrylonitrile	-	-	-	-
111-69-3	Adiponitrile	-	-	-	-
ALDEHYDES	Aldehydes	-	-	-	-
309-00-2	Aldrin	-	-	-	-
ALIPHATIC-M	Aliphatic Hydrocarbon Strea	-	-	-	-
107-05-1	Allyl chloride	-	-	-	-
7429-90-5	Aluminum	-	-	-	-
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3	-	-	-	-
6109-97-3	Amino-9-ethylcarbazolehydr	-	-	-	-
117-79-3	Aminoanthraquinone, 2-	-	-	-	-
7664-41-7	Ammonia	-	-	-	-
62-53-3	Aniline	-	-	-	-
191-26-4	Anthanthrene	-	-	-	-
7440-36-0	Antimony	-	-	-	-
ANTIMONY-C	Antimony Compounds	-	-	-	-
1309-64-4	Antimony trioxide	-	-	-	-
140-57-8	Aramite	-	-	-	-
7440-38-2	Arsenic	-	-	-	-
ARSENIC-CO	Arsenic Compounds	-	-	-	-
1327-53-3	Arsenic Trioxide	-	-	-	-
7784-42-1	Arsine	-	-	-	-
1332-21-4	Asbestos (units in fibers)	-	-	-	-
1332-21-4-LA	Asbestos, Libby Amphibole	-	-	-	-
123-77-3	Azodicarbonamide	-	-	-	-
10294-40-3	Barium Chromate	-	-	-	-
199-54-2	Benz[e]aceanthrylene	-	-	-	-
202-33-5	Benz[j]aceanthrylene	-	-	-	-
211-91-6	Benz[l]aceanthrylene	-	-	-	-
71-43-2	Benzene	-	-	-	-
92-87-5	Benzidine	-	-	-	-
205-82-3	Benzo(j)fluoranthene	-	-	-	-
207-08-9	Benzo(k)fluoranthene	-	-	-	-
56-55-3	Benzo[a]anthracene	-	-	-	-
50-32-8	Benzo[a]pyrene	-	-	-	-
205-99-2	Benzo[b]fluoranthene	-	-	-	-
205-12-9	Benzo[c]fluorene	-	-	-	-
191-24-2	Benzo[g,h,i]perylene	-	-	-	-
65-85-0	Benzoic Acid	-	-	-	-
100-44-7	Benzyl chloride	-	-	-	-
7440-41-7	Beryllium	-	-	-	-
BERYLLIUM-	Beryllium Compounds	-	-	-	-
13510-49-1	Beryllium sulfate	-	-	-	-
111-44-4	Bis(2-chloroethyl)ether	-	-	-	-
117-81-7	Bis(2-ethylhexyl)phthalate (	-	-	-	-
542-88-1	Bis(chloromethyl)ether	-	-	-	-
7440-42-8	Boron And Borates Only	-	-	-	-
10294-34-5	Boron Trichloride	-	-	-	-
7637-07-2	Boron Trifluoride	-	-	-	-
108-86-1	Bromobenzene	-	-	-	-
74-97-5	Bromochloromethane	-	-	-	-
75-27-4	Bromodichloromethane	-	-	-	-
75-25-2	Bromoform	-	-	-	-
74-83-9	Bromomethane	-	-	-	-
106-94-5	Bromopropane, 1-	-	-	-	-
106-99-0	Butadiene, 1,3-	-	-	-	-
78-92-2	Butyl alcohol, sec-	-	-	-	-
111-76-2	Butyl Cellosolve (ethylene g	-	-	-	-
25013-16-5	Butylated hydroxyanisole	-	-	-	-
3068-88-0	Butyrolactone, beta-	-	-	-	-
7440-43-9	Cadmium	-	-	-	-
CADMIUM-CO	Cadmium Compounds	-	-	-	-
13765-19-0	Calcium Chromate	-	-	-	-
105-60-2	Caprolactum	-	-	-	-
75-15-0	Carbon disulfide	-	-	-	-
630-08-0	Carbon Monoxide	-	-	-	-
56-23-5	Carbon tetrachloride	-	-	-	-
463-58-1	Carbonyl sulfide	-	-	-	-
111-15-9	Cellosolve Acetate (ethylen	-	-	-	-
1306-38-3	Cerium Oxide and Cerium C	-	-	-	-
12789-03-6	Chlordane or (57-74-9)	-	-	-	-
115-28-6	Chlorendic acid	-	-	-	-
108171-26-2	Chlorinated Paraffins (C12,	-	-	-	-
7782-50-5	Chlorine	-	-	-	-

10049-04-4	Chlorine Oxide (CLO2)	-	-	-	-
75-68-3	Chloro-1,1-difluoroethane, 1	-	-	-	-
563-47-3	Chloro-2-methylpropene, 3-	-	-	-	-
95-83-0	Chloro-o-phenylenediamine	-	-	-	-
95-69-2	Chloro-o-toluidine, p-	-	-	-	-
532-27-4	Chloroacetophenone, 2-	-	-	-	-
108-90-7	Chlorobenzene	-	-	-	-
98-56-6	Chlorobenzotrifluoride, 4-	-	-	-	-
75-45-6	Chlorodifluoromethane (HC	-	-	-	-
67-66-3	Chloroform	-	-	-	-
107-30-2	Chloromethyl Methyl Ether	-	-	-	-
88-73-3	Chloronitrobenzene, o-	-	-	-	-
100-00-5	Chloronitrobenzene, p-	-	-	-	-
76-06-2	Chloropicrin	-	-	-	-
126-99-8	Chloroprene	-	-	-	-
1333-82-0	Chromic acid mists and diss	-	-	-	-
7440-47-3	Chromium	-	-	-	-
18540-29-9	Chromium (Hexavalent)	-	-	-	-
18540-29-9-p	Chromium (Hexavalent) - P	-	-	-	-
CHROM-COM	Chromium Compounds	-	-	-	-
16065-83-1	Chromium(III) Compounds	-	-	-	-
218-01-9	Chrysene (Benzo(a)phenan	-	-	-	-
87-29-6	Cinnamyl anthranilate	-	-	-	-
10061-01-5	cis-1,3-Dichloropropene	-	-	-	-
8007-45-2	Coal Tar	-	-	-	-
7440-48-4	Cobalt	-	-	-	-
0-00-7	Coke Oven Emissions	-	-	-	-
7440-50-8	Copper	-	-	-	-
COPPER-CO	Copper Compounds	-	-	-	-
120-71-8	Cresidine, p-	-	-	-	-
108-39-4	Cresol, m-	-	-	-	-
95-48-7	Cresol, o-	-	-	-	-
106-44-5	Cresol, p-	-	-	-	-
1319-77-3	Cresols/Cresylic acid (isome	-	-	-	-
98-82-8	Cumene	-	-	-	-
135-20-6	Cupferron	-	-	-	-
57-12-5	Cyanide (Cyanide ion, Inorg	-	-	-	-
CYANIDE-CO	Cyanide Compounds	-	-	-	-
110-82-7	Cyclohexane	-	-	-	-
108-94-1	Cyclohexanone	-	-	-	-
27208-37-3	Cyclopenta[c,d]pyrene	-	-	-	-
50-29-3	DDT	-	-	-	-
615-05-4	Diaminoanisole, 2,4-	-	-	-	-
101-80-4	Diaminodiphenyl ether, 4,4-	-	-	-	-
103-33-3	Diazene, Diphenyl	-	-	-	-
226-36-8	Dibenz(a,h)acridine	-	-	-	-
224-42-0	Dibenz(a,j)acridine	-	-	-	-
53-70-3	Dibenz[a,h]anthracene	-	-	-	-
192-65-4	Dibenzo(a,e)pyrene	-	-	-	-
189-64-0	Dibenzo(a,h)pyrene	-	-	-	-
191-30-0	Dibenzo(a,l)pyrene	-	-	-	-
194-59-2	Dibenzo(c,g)carbazole, 7H-	-	-	-	-
5385-75-1	Dibenzo[a,e]fluoranthene	-	-	-	-
189-55-9	Dibenzo[a,i]pyrene	-	-	-	-
96-12-8	Dibromo-3-chloropropane, 1	-	-	-	-
764-41-0	Dichloro-2-butene, 1,4-	-	-	-	-
1476-11-5	Dichloro-2-butene, cis-1,4-	-	-	-	-
106-46-7	Dichlorobenzene(p), 1,4-	-	-	-	-
25321-22-6	Dichlorobenzenes	-	-	-	-
91-94-1	Dichlorobenzidene, 3,3-	-	-	-	-
75-71-8	Dichlorodifluoromethane (C	-	-	-	-
75-35-4	Dichloroethylene (1,1-) (Vin	-	-	-	-
156-60-5	Dichloroethylene, trans-1,2-	-	-	-	-
542-75-6	Dichloropropene, 1,3-	-	-	-	-
78-88-6	Dichloropropene, 2,3-	-	-	-	-
62-73-7	Dichlorvos	-	-	-	-
77-73-6	Dicyclopentadiene	-	-	-	-
60-57-1	Dieldrin	-	-	-	-
0-02-4	Diesel exhaust particulate	-	-	-	-
111-42-2	Diethanolamine	-	-	-	-
112-34-5	Diethylene Glycol Monobuty	-	-	-	-
111-90-0	Diethylene Glycol Monoethy	-	-	-	-
75-37-6	Difluoroethane, 1,1-	-	-	-	-
108-20-3	Diisopropyl Ether	-	-	-	-
60-11-7	Dimethyl aminoazobenzene	-	-	-	-
68-12-2	Dimethyl formamide	-	-	-	-
108-01-0	Dimethylamino ethanol, 2-	-	-	-	-
57-97-6	Dimethylbenz[a]anthracene,	-	-	-	-
57-14-7	Dimethylhydrazine, 1,1-	-	-	-	-
42397-64-8	Dinitropyrene, 1,6- (BaP)	-	-	-	-
42397-65-9	Dinitropyrene, 1,8- (BaP)	-	-	-	-
121-14-2	Dinitrotoluene, 2,4-	-	-	-	-
123-91-1	Dioxane, 1,4- (1,4-Diethylen	-	-	-	-
122-66-7	Diphenylhydrazine, 1,2-	-	-	-	-
106-89-8	Epichlorohydrin (l-Chloro-2,	-	-	-	-
106-88-7	Epoxybutane, 1,2-	-	-	-	-
110-80-5	Ethoxyethanol, 2- (ethylene	-	-	-	-
141-78-6	Ethyl acetate	-	-	-	-
140-88-5	Ethyl Acrylate	-	-	-	-
100-41-4	Ethyl benzene	-	-	-	-
51-79-6	Ethyl carbamate (Urethane)	-	-	-	-

75-00-3	Ethyl chloride (Chloroethane	-	-	-	-
97-63-2	Ethyl Methacrylate	-	-	-	-
106-93-4	Ethylene dibromide (Dibrom	-	-	-	-
107-06-2	Ethylene dichloride (1,2-Dic	-	-	-	-
107-21-1	Ethylene glycol	-	-	-	-
75-21-8	Ethylene oxide	-	-	-	-
96-45-7	Ethylene thiourea	-	-	-	-
75-34-3	Ethylidene dichloride (1,1-D	-	-	-	-
206-44-0	Fluoranthene	-	-	-	-
FLUORIDES	Fluorides (except hydrogen	-	-	-	-
50-00-0	Formaldehyde	-	-	-	-
64-18-6	Formic Acid	-	-	-	-
111-30-8	Glutaraldehyde	-	-	-	-
0-01-2	Glycol ethers	-	-	-	-
76-44-8	Heptachlor	-	-	-	-
1024-57-3	Heptachlor epoxide	-	-	-	-
35822-46-9	Heptachlorodibenzo-p-dioxi	-	-	-	-
00-08-5	Heptachlorodibenzodioxin,	-	-	-	-
67562-39-4	Heptachlorodibenzofuran, 1	-	-	-	-
55673-89-7	Heptachlorodibenzofuran, 1	-	-	-	-
00-08-4	Heptachlorodibenzofuran, A	-	-	-	-
142-82-5	Heptane, N	-	-	-	-
118-74-1	Hexachlorobenzene	-	-	-	-
87-68-3	Hexachlorobutadiene	-	-	-	-
608-73-1	Hexachlorocyclohexane (tec	-	-	-	-
319-84-6	Hexachlorocyclohexane, alp	-	-	-	-
319-85-7	Hexachlorocyclohexane, be	-	-	-	-
77-47-4	Hexachlorocyclopentadiene	-	-	-	-
39227-28-6	Hexachlorodibenzo-p-dioxin	-	-	-	-
57653-85-7	Hexachlorodibenzo-p-dioxin	-	-	-	-
19408-74-3	Hexachlorodibenzo-p-dioxin	-	-	-	-
00-08-3	Hexachlorodibenzodioxins,	-	-	-	-
70648-26-9	Hexachlorodibenzofuran, 1,	-	-	-	-
57117-44-9	Hexachlorodibenzofuran, 1,	-	-	-	-
72918-21-9	Hexachlorodibenzofuran, 1,	-	-	-	-
60851-34-5	Hexachlorodibenzofuran, 2,	-	-	-	-
00-08-2	Hexachlorodibenzofurans, A	-	-	-	-
67-72-1	Hexachloroethane	-	-	-	-
822-06-0	Hexamethylene-1,6-diisocya	-	-	-	-
110-54-3	Hexane	-	-	-	-
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl	-	-	-	-
591-78-6	Hexanone-2	-	-	-	-
302-01-2	Hydrazine	-	-	-	-
10034-93-2	Hydrazine sulfate	-	-	-	-
7647-01-0	Hydrochloric acid (hydrogen	-	-	-	-
74-90-8	Hydrogen cyanide	-	-	-	-
7664-39-3	Hydrogen fluoride (Hydroflu	-	-	-	-
7783-07-5	Hydrogen selenide	-	-	-	-
7783-06-4	Hydrogen sulfide	-	-	-	-
193-39-5	Indeno(1,2,3-cd)pyrene	-	-	-	-
5888-33-5	Isobornyl acrylate	3.10	1.04	0.36	0.23
78-59-1	Isophorone	-	-	-	-
67-63-0	Isopropyl alcohol	-	-	-	-
7439-92-1	Lead	-	-	-	-
7758-97-6	Lead Chromate	-	-	-	-
LEAD-COMP	Lead Compounds	-	-	-	-
58-89-9	Lindane (all isomers)	-	-	-	-
108-31-6	Maleic anhydride	-	-	-	-
7439-96-5	Manganese	-	-	-	-
MANGANESE	Manganese Compounds	-	-	-	-
7439-97-6	Mercury (elemental)	-	-	-	-
MERCURY-C	Mercury Compounds	-	-	-	-
126-98-7	Methacrylonitrile	-	-	-	-
67-56-1	Methanol	-	-	-	-
109-86-4	Methoxyethanol, 2- (ethylen	-	-	-	-
96-33-3	Methyl acrylate	-	-	-	-
110-49-6	Methyl Cellosolve Acetate	-	-	-	-
74-87-3	Methyl chloride (Chlorometh	-	-	-	-
71-55-6	Methyl chloroform (1,1,1-Tri	-	-	-	-
78-93-3	Methyl ethyl ketone (2-Buta	-	-	-	-
60-34-4	Methyl Hydrazine	-	-	-	-
108-10-1	Methyl isobutyl ketone (Hex	-	-	-	-
624-83-9	Methyl isocyanate	-	-	-	-
80-62-6	Methyl methacrylate	-	-	-	-
1634-04-4	Methyl tert butyl ether	-	-	-	-
56-49-5	Methylcholanthrene, 3-	-	-	-	-
3697-24-3	Methylchrysene, 5-	-	-	-	-
101-14-4	Methylene bis(2-chloroanilin	-	-	-	-
74-95-3	Methylene Bromide	-	-	-	-
75-09-2	Methylene chloride (Dichlor	-	-	-	-
101-68-8	Methylene diphenyl diisocya	-	-	-	-
101-77-9	Methylenedianiline, 4,4-	-	-	-	-
90-94-8	Michler's ketone	-	-	-	-
10595-95-6	N- Nitrosomethylethylamine	-	-	-	-
924-16-3	N-Nitrosodi-n-butylamine	-	-	-	-
621-64-7	N-Nitrosodi-n-propylamine	-	-	-	-
55-18-5	N-Nitrosodiethylamine	-	-	-	-
62-75-9	N-Nitrosodimethylamine	-	-	-	-
86-30-6	N-Nitrosodiphenylamine	-	-	-	-
59-89-2	N-Nitrosomorpholine	-	-	-	-
100-75-4	N-Nitrosopiperidine	-	-	-	-

111-84-2	N-Nonane	-	-	-	-
64724-95-6	Naphtha, High Flash Aroma	-	-	-	-
91-20-3	Naphthalene	-	-	-	-
193-09-9	Naphtho[2,3-e]pyrene	-	-	-	-
7440-02-0	Nickel	-	-	-	-
NICKEL-COM	Nickel Compounds	-	-	-	-
1313-99-1	Nickel oxide	-	-	-	-
0-02-5	Nickel refinery dust from the	-	-	-	-
12035-72-2	Nickel sulfide (NI3S2)	-	-	-	-
7697-37-2	Nitric acid	-	-	-	-
139-13-9	Nitrilotriacetic acid	-	-	-	-
18662-53-8	Nitrilotriacetic acid, trisodiu	-	-	-	-
602-87-9	Nitroacenaphthene, 5-	-	-	-	-
88-74-4	Nitroaniline, 2-	-	-	-	-
100-01-6	Nitroaniline, 4-	-	-	-	-
98-95-3	Nitrobenzene	-	-	-	-
7496-02-8	Nitrochrysene, 6-	-	-	-	-
607-57-8	Nitrofluorene, 2-	-	-	-	-
10102-44-0	Nitrogen dioxide (NO2)	-	-	-	-
75-52-5	Nitromethane	-	-	-	-
79-46-9	Nitropropane, 2-	-	-	-	-
5522-43-0	Nitropyrene, 1-	-	-	-	-
57835-92-4	Nitropyrene, 4-	-	-	-	-
156-10-5	Nitrosodiphenylamine, p-	-	-	-	-
3268-87-9	Octachlorodibenzo-p-dioxin,	-	-	-	-
39001-02-0	Octachlorodibenzofuran, 1,2	-	-	-	-
10028-15-6	Ozone	-	-	-	-
74472-37-0	PCB 114 (2,3,4,4,5 Pentach	-	-	-	-
31508-00-6	PCB 118 (2,3,4,4,5 Pentach	-	-	-	-
65510-44-3	PCB 123 (2,3,4,4,5 Pentach	-	-	-	-
57465-28-8	PCB 126 (3,3,4,4,5 Pentach	-	-	-	-
38380-0804	PCB 156 (2,3,3,4,4,5 Hexac	-	-	-	-
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexac	-	-	-	-
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexac	-	-	-	-
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexac	-	-	-	-
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Hep	-	-	-	-
32598-13-3	PCB 77 (3,3,4,4-Tetrachloro	-	-	-	-
70362-50-4	PCB 81 (3,4,4,5 Tetrachloro	-	-	-	-
32598-14-4	PCB105 (2,3,3,4,4 Pentachl	-	-	-	-
40321-76-4	Pentachlorodibenzo-p-dioxi	-	-	-	-
00-08-1	Pentachlorodibenzodioxins,	-	-	-	-
57117-41-6	Pentachlorodibenzofuran, 1	-	-	-	-
57117-31-4	Pentachlorodibenzofuran, 2	-	-	-	-
00-09-0	Pentachlorodibenzofurans,	-	-	-	-
87-86-5	Pentachlorophenol	-	-	-	-
109-66-0	Pentane, n-	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-
ALIPHATIC-C	Petroleum Hydrocarbons, A	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-
AROMATIC-C	Petroleum Hydrocarbons, A	-	-	-	-
85-01-8	Phenanthrene	-	-	-	-
108-95-2	Phenol	-	-	-	-
75-44-5	Phosgene	-	-	-	-
7803-51-2	Phosphine	-	-	-	-
7664-38-2	Phosphoric acid	-	-	-	-
85-44-9	Phthalic anhydride	-	-	-	-
59536-65-1	Polybrominated Biphenyls	-	-	-	-
1336-36-3	Polychlorinated biphenyls (A	-	-	-	-
00-08-0	Polychlorinated Dibenzo-P-	-	-	-	-
00-05-0	Polychlorinated Dibenzodio	-	-	-	-
00-05-1	Polychlorinated Dibenzofura	-	-	-	-
130498-29-2	Polycyclic Aromatic Hydroca	-	-	-	-
00-01-7	Polycyclic Organic Matter (P	-	-	-	-
9016-87-9	Polymeric diphenylmethane	-	-	-	-
7758-01-2	Potassium bromate	-	-	-	-
1120-71-4	Propane sultone, 1,3-	-	-	-	-
57-57-8	Propiolactone, beta-	-	-	-	-
123-38-6	Propionaldehyde	-	-	-	-
115-07-1	Propylene	-	-	-	-
78-87-5	Propylene dichloride (1,2-Di	-	-	-	-
107-98-2	Propylene Glycol Monometh	-	-	-	-
75-56-9	Propylene oxide	-	-	-	-
930-55-2	Pyrrolidine, 1-Nitroso-	-	-	-	-
7782-49-2	Selenium	-	-	-	-
0-01-9	Selenium Compounds	-	-	-	-
7631-86-9	Silica (crystalline, respirable	-	-	-	-
1310-73-2	Sodium hydroxide	-	-	-	-
10588-01-9	Sodium Dichromate	-	-	-	-
7789-06-2	Strontium chromate	-	-	-	-
100-42-5	Styrene	-	-	-	-
96-09-3	Styrene oxide	-	-	-	-
14808-79-8	Sulfates	-	-	-	-
126-33-0	Sulfolane	-	-	-	-
7446-09-5	Sulfur dioxide	-	-	-	-
7664-93-9	Sulfuric acid (aerosol forms	-	-	-	-
8014-95-7	Sulfuric Acid mixture w. sulf	-	-	-	-
00-09-1	TCDD Eqivalents, 2,3,7,8-	-	-	-	-
540-88-5	Tert-Butyl Acetate	-	-	-	-
1746-01-6	Tetrachlorodibenzo-p-dioxin	-	-	-	-
00-08-8	Tetrachlorodibenzodioxins,	-	-	-	-
51207-31-9	Tetrachlorodibenzofuran, 2,	-	-	-	-

00-08-6	Tetrachlorodibenzofurans, A	-	-	-	-
630-20-6	Tetrachloroethane, 1,1,1,2-	-	-	-	-
79-34-5	Tetrachloroethane, 1,1,2,2-	-	-	-	-
127-18-4	Tetrachloroethylene (Perchl	-	-	-	-
811-97-2	Tetrafluoroethane, 1,1,1,2-	-	-	-	-
109-99-9	Tetrahydrofuran	-	-	-	-
62-55-5	Thioacetamide	-	-	-	-
62-56-6	Thiourea	-	-	-	-
108-88-3	Toluene	-	-	-	-
584-84-9	Toluene-2,4-diisocyanate	-	-	-	-
91-08-7	Toluene-2,6-diisocyanate	-	-	-	-
95-80-7	Toluene diamine, 2,4-	-	-	-	-
26471-62-5	Toluenediisocyanate (mixed	-	-	-	-
95-53-4	Toluidine, o- (Methylaniline,	-	-	-	-
8001-35-2	Toxaphene (chlorinated ca	-	-	-	-
10061-02-6	trans-1,3-Dichloropropene	-	-	-	-
120-82-1	Trichlorobenzene, 1,2,4-	-	-	-	-
79-00-5	Trichloroethane, 1,1,2-	-	-	-	-
79-01-6	Trichloroethylene (TCE)	-	-	-	-
75-69-4	Trichlorofluoromethane (CF	-	-	-	-
88-06-2	Trichlorophenol, 2,4,6-	-	-	-	-
96-18-4	Trichloropropane, 1,2,3-	-	-	-	-
96-19-5	Trichloropropene, 1,2,3-	-	-	-	-
76-13-1	Trichlorotrifluoroethane, 1,1	-	-	-	-
121-44-8	Triethylamine	-	-	-	-
420-46-2	Trifluoroethane, 1,1,1-	-	-	-	-
526-73-8	Trimethylbenzene, 1,2,3-	-	-	-	-
95-63-6	Trimethylbenzene, 1,2,4-	-	-	-	-
108-67-8	Trimethylbenzene, 1,3,5-	-	-	-	-
URANIUM-SO	Uranium (Soluble Salts)	-	-	-	-
7440-61-1	Uranium, Insoluble Compou	-	-	-	-
7440-62-2	Vanadium and Compounds	-	-	-	-
1314-62-1	Vanadium Pentoxide, (V2O	-	-	-	-
108-05-4	Vinyl acetate	-	-	-	-
593-60-2	Vinyl bromide	-	-	-	-
75-01-4	Vinyl chloride	-	-	-	-
1330-20-7	Xylenes	-	-	-	-
108-38-3	Xylenes, m-	-	-	-	-
95-47-6	Xylenes, o-	-	-	-	-
106-42-3	Xylenes, p-	-	-	-	-
13530-65-9	Zinc chromate	-	-	-	-

RASS version: 2020-12
No inputs on this page
Air Concentrations in ug/m

Risk value hierarchy: MDH (RAA | HBV | HRV) > EPA IRIS > CAL EPA > ATSDR > PPRTV > MPCA

Toxicity Values Reference Table

Surrogate	Group	CAS or MPCA-ID	Chemical Name	Includes HAPs	Acute Air Reference	Acute Air Concentration	Acute General Endpoint	Specific Endpoint	Acute Footnote	Surrogate CAS	Surrogate Name	Cancer Based Air Reference	Cancer Unit Risk	Concentration (Risk of 1E-05)	Cancer Footnote	Surrogate CAS	Surrogate Name	Chronic Air Reference	Chronic Air Concentration	General Endpoint	Specific Endpoint	Non-Cancer Footnote	Surrogate CAS	Surrogate Name	Chronic Air Reference	Sub-Chronic Air Concentration	General Endpoint	Specific Endpoint	Chronic Footnote	Surrogate CAS	Surrogate Name	Marked with "1" if applies: Bioaccumulative	Developmental Toxicant	Respiratory Sensitizer
	PAH	202-94-8	11H-Benz[b,c]aceanthr	YES								MDH RAA	0.00003	0.2																		1	0	0
		202-98-2	4H-Cyclopenta[d,e,f]ch	YES								MDH RAA	0.00018	0.033																		1	0	0
	ALD	75-07-0	Acetaldehyde	YES	CAL EPA	470	Eyes , Resp	Respiratory system; eyes				MDH HRV	0.0000022	5				IRIS	9	Resp	olfactory epithelium degeneratio											0	0	0
		60-35-5	Acetamide	YES								CAL EPA	0.00002	0.5																		0	0	0
		67-64-1	Acetone	NO	ATSDR	62,000	Neuro, Eyes, Resp											ATSDR	31,000	Neuro, Eyes, Resp					ATSDR	31,000	Neuro, Eyes, Resp				0	0	0
		75-86-5	Acetone Cyanohydri	NO														PPRTV	2	Resp	breathing diffculties				PPRTV	20	Resp	respiratory			0	0	0
		75-05-8	Acetonitrile	YES														MDH HRV	60	Systemic	mortality											0	0	0
		53-96-3	Acetylaminofluorene, 2	NO								CAL EPA	0.0013	0.0077																		0	0	0
		107-02-8	Acrolein	YES	MDH HBV	5	Eyes	eye irritant	10									MDH HBV	0.40	Resp	upper respir	10			MDH HRV	1	Resp	Upper respiratory				0	0	0
		79-06-1	Acrylamide	YES								IRIS	0.0001	0.1				IRIS	6.0	Neuro	degenerative nerve change											0	0	0
		3688-53-7	Acrylamide, 2-(2-furyl)-	NO								CAL EPA	0.000069	0.14																		0	0	0
		79-10-7	Acrylic acid	YES	CAL EPA	6,000	Resp , Eyes	respiratory system; eye										IRIS	1.0	Resp	olfactory epithelium degeneratio				MDH HRV	3	Resp	Upper respiratory				0	0	0
		107-13-1	Acrylonitrile	YES								MDH HRV	0.0001	0.1				IRIS	2.0	Resp	nasal inflammation and degeneration of epitheliu											0	0	0
		111-69-3	Adiponitrile	NO														PPRTV	6.0	Blood	Slight anemia without any nonneoplastic lesion				PPRTV	60	Blood	Slight anemia without any nonneoplastic lesion				0	0	0
SUR	ALD	ALDEHYDES	Aldehydes	Some	MDH	50	Resp, Eyes	irritant - eye	4	50-00-0	Formaldehyde							CAL EPA	0.08	Resp	Respiratory	4	111-30-8	Glutaraldehy	MDH	9	Eyes, Resp	Eye, nose irritation	50-00-0	Formaldehy		0	0	0
		309-00-2	Aldrin	NO								IRIS	0.0049	0.002																		1	0	0
		ALIPHATIC-MID	Aliphatic Hydrocarbon	NO														PPRTV	100	Resp	Goblet cell hypertrophy				PPRTV	100	Resp	Goblet cell hypertrophy				0	0	0
		107-05-1	Allyl chloride	YES								CAL EPA	0.000006	1.7				IRIS	1.00	Neuro	neurotoxicity				MDH HRV	10	Neuro	nervous system				0	0	0
		7429-90-5	Aluminum	NO														PPRTV	5.00	Neuro	Psychomotor and cognitive impairment											0	0	0
		712-68-5	Amino-5-(5-nitro-2-fury	NO								CAL EPA	0.0046	0.0022																		0	0	0
		6109-97-3	Amino-9-ethylcarbazol	NO								CAL EPA	0.000022	0.45																		0	0	0
		117-79-3	Aminoanthraquinone, 2	NO								CAL EPA	0.0000094	1.1																		0	0	0
		7664-41-7	Ammonia	NO	MDH HRV	3,200	Resp , Eyes	irritant - eye and respiratory system										MDH HRV	80.00	Resp	upper and lower respiratory system				PPRTV	100	Resp	Pulmonary				0	0	0
		62-53-3	Aniline	YES								CAL EPA	0.0000016	6.3				IRIS	1.00	Systemic	Methemoglobin increase, spleen toxicit											0	0	0
		191-26-4	Anthanthrene	NO								MDH RAA	0.00024	0.025																		1	0	0
SUR	Sb	7440-36-0	Antimony	YES														MDH HRV	0.20	Resp	lower respiratory system	1309-64-4	Antimony trioxide									1	0	0
SUR	Sb	ANTIMONY-COM	Antimony Compound	YES														MDH HRV	0.20	Resp	lower respiratory system	1309-64-4	Antimony trioxide									0	0	0
	Sb	1309-64-4	Antimony trioxide	YES														MDH HRV	0.20	Resp	lower respiratory system				PPRTV	0.2	Resp	Increased incidence of alveolar and intraalveolar m				0	0	0
		140-57-8	Aramite	NO								IRIS	7.1E-06	1.4																		0	0	0
	As	7440-38-2	Arsenic	YES	CAL EPA	0	Neuro , Cardio , R	Developmental; cardiovascular system; nervous sy				MDH HRV	0.005	0.002				CAL EPA	0.02	Repro , Card	Development; cardiovascular system; nervous system; respiratory; ski											1	1	0
SUR	As	ARSENIC-COMP	Arsenic Compound	YES	CAL EPA	0	Repro , Cardio , N	Developmental; cardiova		7440-38-2	Arsenic	MDH HRV	0.005	0.002		7440-38-2	Arsenic	CAL EPA	0.02	Repro , Card	Development; cardiovasc		7440-38-2	Arsenic								1	1	0
SUR	As	1327-53-3	Arsenic Trioxide	YES	CAL EPA	0	Repro , Cardio , N	Developmental; cardiova		7440-38-2	Arsenic	MDH HRV	0.005	0.002		7440-38-2	Arsenic	CAL EPA	0.02	Repro , Card	Development; cardiovasc		7440-38-2	Arsenic								1	1	0
SUR	As	7784-42-1	Arsine	YES	MDH HRV	200	Blood	hematologic				MDH HRV	0.005	0.002		7440-38-2	Arsenic	IRIS	0.05	Blood	hematological effects, increased spleen weigh				MDH HRV	0.1	Blood	hematologic system				0	0	0
		1332-21-4	Asbestos (units in fiber	YES								IRIS	2.3E-07	43																		0	0	0
		1332-21-4-LAA	Asbestos, Libby Amphi	YES								IRIS	1.7E-07	59				IRIS	90,000	Resp												0	0	0
		123-77-3	Azodicarbonamide	NO														PPRTV	0.01	Resp	respiratory				PPRTV	0.007	Resp	Decrements in lung functio				0	0	0
		10294-40-3	Barium Chromate	YES								CAL EPA	0.15	0.000067				CAL EPA	0.20	Resp					MDH HRV	0.02	Resp	Upper and lower respirato	7440-47-3	Chromium		0	1	1
	PAH	199-54-2	Benz[e]aceanthrylen	YES								MDH RAA	0.00048	0.013																		1	0	0
	PAH	202-33-5	Benz[j]aceanthrylene	YES								MDH RAA	0.036	0.00017																		1	0	0
	PAH	211-91-6	Benz[j]aceanthrylene	YES								MDH RAA	0.003	0.002																		1	0	0
		71-43-2	Benzene	YES	MDH HBV (	30	Blood	decreased lymphocyte coun				MDH HBV (2	1.25E-05	0.8				MDH HBV (2	3	Blood	decreased lymphocyte coun				MDH HBV (	8	Blood	Decreased lymphocyte coun				0	1	0
		92-87-5	Benzidine	YES								MDH HRV	0.05	0.0002																		0	0	0
	PAH	205-82-3	Benzo(j)fluoranthen	YES								MDH RAA	0.00018	0.033																		1	0	0
	PAH	207-08-9	Benzo(k)fluoranthen	YES								MDH RAA	1.8E-05	0.33																		1	0	0
	PAH	56-55-3	Benzo[a]anthracene	YES								MDH RAA	0.00012	0.05																		1	0	0
	PAH	50-32-8	Benzo[a]pyrene	YES								MDH RAA	0.0006	0.01				IRIS	0.00	Repro	Decreased embryo/fetal surviva											1	0	0
	PAH	205-99-2	Benzo[b]fluoranthen	YES								MDH RAA	0.00048	0.013																		1	0	0
	PAH	205-12-9	Benzo[c]fluorene	YES								MDH RAA	0.012	0.0005																		1	0	0
	PAH	191-24-2	Benzo[g,h,i]perylene	YES								MDH RAA	5.4E-06	1.1																		1	0	0
		65-85-0	Benzoic Acid	NO																					PPRTV	2	Resp					0	0	1
		100-44-7	Benzyl chloride	YES	CAL EPA	240	Resp , Eyes	respiratory system; eye				CAL EPA	4.9E-05	0.2				PPRTV	1.00	Systemic	Lesions				PPRTV	4	Systemic	Lesions				0	0	0
	Be	7440-41-7	Beryllium	YES								MDH HRV	0.0025	0.004				IRIS	0.02	Blood, Resp	beryllium sensitization and progression to CB											0	0	1
SUR	Be	BERYLLIUM-CO	Beryllium Compound	YES								MDH HRV(IR	0.0025	0.004		7440-41-7	Beryllium	CALEPA	0.01	Resp, Blood	Resp, Blood		1304-56-9	Beryllium Oxide								0	0	1
		13510-49-1	Beryllium sulfate	NO								CALEPA	0.86	0.000012				CALEPA	0.01	Resp, Blood												0	0	1
		111-44-4	Bis(2-chloroethyl)ethe	NO								IRIS	0.00033	0.03											ATSDR	120	Liver					0	0	0
		117-81-7	Bis(2-ethylhexyl)phthal	YES								CAL EPA	2.4E-06	4.2																		0	0	0
		542-88-1	Bis(chloromethyl)ethe	YES								MDH HRV	0.05	0.0002																		0	0	0
		7440-42-8	Boron And Borates Onl	NO	ATSDR	300	Resp																									0	1	0
		10294-34-5	Boron Trichloride	NO														PPRTV	20.00	Resp	respiratory				PPRTV	20	Resp	respiratory				0	0	0
		7637-07-2	Boron Trifluoride	NO														CALEPA	13.00	Bone/Teeth,	Resp											0	0	0
		108-86-1	Bromobenzene	NO														IRIS	60.00	Liver, Kidne	hepatocellular (liver) cytomegaly, kidney, lun				IRIS	200	Liver, Kidne	hepatocellular (liver) cytomegaly, kidney, lun				0	0	0
		74-97-5	Bromochloromethan	NO																					PPRTV	100	Liver	Increased relative liver weigh				0	0	0
		75-27-4	Bromodichloromethan	NO								CAL EPA	0.000037	0.27											PPRTV	20	Kidney					0	0	0
		75-25-2	Bromoform	YES								IRIS	0.0000011	9.1																		0	0	0
		74-83-9	Bromomethane	YES	MDH HRV	2,000	Neuro	CNS	5									MDH HRV	5.00	Resp	upper respiratory system				PPRTV	100	Resp	Degeneration of the olfactory epithelium for the nas				0	0	0
		106-94-5	Bromopropane, 1-	NO	MDH HBV	50,000	Repro	developmen	10									MDH HBV	20.00	Resp	respiratory	10			MDH HBV	4,000	Neuro	nervous system				0	1	0
		106-99-0	Butadiene, 1,3-	YES	CAL EPA	660	Repro	Developmenta				MDH HBV	0.00005	0.2	10			IRIS	2.00	Repro	Ovarian atrophy											0	1	0
		78-92-2	Butyl alcohol, sec-	NO														PPRTV	30,000	Repro	Reduced fetal body weight				PPRTV	30,000	Repro	Reduced fetal body weight				0	0	0
		111-76-2	Butyl Cellosolve (ethyle	NO	CAL EPA	4,700	Resp , Eyes	irritant - eye and respiratory system										MDH HRV (I	1,600	Blood	hematologic system				CALEPA (20	160	Resp , Eyes	irritant - eye and respiratory system				0	0	0
		25013-16-5	Butylated hydroxyaniso	NO								CAL EPA	5.7E-08	180																		0	1	1
		3068-88-0	Butyrolactone, beta-	NO								CAL EPA	0.00029	0.034																		0	0	0
	Cd	7440-43-9	Cadmium	YES								MDH HRV	0.0016667	0.006				CAL EPA	0.02	Kidney, Res	Kidney; respiratory system											0	0	0
SUR	Cd	CADMIUM-COM	Cadmium Compound	YES								MDH HRV	0.0016667	0.006		7440-43-9	Cadmium	CAL EPA	0.02	Kidney, Res	Kidney; respiratory syste		7440-43-9	Cadmium								0	0	0
		13765-19-0	Calcium Chromate	YES								CAL EPA	0.15	0.000067				CAL EPA	0.20	Resp					MDH HRV	0.02	Resp	Upper and lower respirato	7440-47-3	Chromium		0	1	1
		105-60-2	Caprolactum	NO	CAL EPA	50	Eyes	Eyes										CAL EPA	2.2	Resp	Upper respiratory system											0	0	0
		75-15-0	Carbon disulfide	YES	MDH HRV (	6,000	Repro	Reproductive/developmenta										MDH ISV (C	800	Neuro	nervous system											0	1	0
		630-08-0	Carbon Monoxide	NO	CAL EPA	23,000	Cardio	Cardiovascular system																								0	0	0
		56-23-5	Carbon tetrachloride	YES	CAL EPA	1,900	Repro , Neuro , Li	developmental,Alimentary (liver), reproductive, nerv				IRIS	6E-06	1.7				IRIS	100	Digest, Repr	Alimentary system; development; nervous system											0	1	0
		463-58-1	Carbonyl sulfide	NO	CAL EPA	660	Neuro	Central Nervous System										PPRTV	100	Systemic, N	neurotoxicity				PPRTV	1,000	Neuro	Neurotoxicity				0	0	0
	Glycol	111-15-9	Cellosolve Acetate (eth	NO	MDH HRV	100	Repro	Reproductive/developmenta										CAL EPA	300	Repro	Reproductive				PPRTV	60	Repro	Reproductive				0	1	0
		1306-38-3	Cerium Oxide and Ceri	NO														IRIS	0.90	Resp	Lungs											0	0	0
		12789-03-6	Chlordane or (57-74-9)	YES								IRIS	0.0001	0.1				IRIS	0.70	Liver	Hepatic effects				MDH HRV	7	Liver	hepatic system				1	0	0
		115-28-6	Chlorendic acid	NO								CAL EPA	2.6E-05	0.38																		0	0	0
		108171-26-2	Chlorinated Paraffins (	NO								CAL EPA	2.5E-05	0.4																		0	0	0
		7782-50-5	Chlorine	YES	MDH HRV	290	Resp	irritant - respiratory system										CAL EPA	0.20	Resp	Respiratory system											0	0	0
		10049-04-4	Chlorine Oxide (CLO2	NO														IRIS	0.20	Resp	lung effects				MDH HRV	0.6	Resp	lower respiratory system				0	0	0
		75-68-3	Chloro-1,1-difluoroetha	NO														IRIS	50,000	Systemic	none observed											0	0	0
		563-47-3	Chloro-2-methylpropen	NO								CAL EPA	0.00004	0.25																		0	0	1
		95-83-0	Chloro-p-phenylenedia	NO								CAL EPA	0.0000046	2.2																		0	0	0
		95-69-2	Chloro-o-toluidine, p	NO								CAL EPA	0.000077	0.13																		0	0	0
		532-27-4	Chloroacetophenone, 2	YES														MDH HRV	0.03	Resp	upper and lower respiratoly system											0	0	0
		108-90-7	Chlorobenzen	YES														CAL EPA	1,000	Digest, Kidn	Alimentary system; kidney; reproductive system				PPRTV	500	Liver	Increased weight and hepatocellualr hypertrophy;nc				0	0	0
		98-56-6	Chlorobenzotrifluoride,	NO														PPRTV	300	Liver, Blood	Hepatocellular hypertrophy, increased liver weight,				PPRTV	3,000	Liver	Hepatocellular hypertrophy, increased liver weight,				0	0	0
		75-45-6	Chlorodifluoromethane	NO														IRIS	50,000	Kidney, Rep	increased kidney, adrenal, pituitary weight, reduced materinal weight gai											0	0	0
		67-66-3	Chloroform	YES	MDH ISV (A	100	Repro	Reproductive/developmenta				IRIS	0.000023	0.43	10			CAL EPA	300	Digest, Kidn	Alimentary system; kidney; developmen											0	1	0
		107-30-2	Chloromethyl Methyl E	NO								CAL EPA	0.00069	0.014																		0	0	0
		88-73-3	Chloronitrobenzene, o	NO																					PPRTV	0.1	Resp	Nasal Lesions				0	0	1
		100-00-5	Chloronitrobenzene, p	NO														PPRTV	2.00	Blood	Methemoglobinemia, structural abnormalities in ery				PPRTV	6	Liver, Blood	Methemoglobinemia, structural abnormalities in ery				0	0	0
		76-06-2	Chloropicrin	NO	CAL EPA	29	Resp , Eyes	respiratory system; eye										CAL EPA	0.40	Resp	Respiratory system											0	0	0
		126-99-8	Chloroprene	YES								IRIS	0.0003	0.033				IRIS	20.00	Resp, Blood	olfactory atrophy, aveolar hyperplasia and splenic hematopoietic proliferatio											0	0	0
	Cr	1333-82-0	Chromic acid mists and	YES								MDH HRV	0.0125	0.0008				IRIS	0.01	Resp	nasal septum atrophy				MDH HRV	0.02	Resp	Upper and lower respiratory				1	1	1
SUR	Cr	7440-47-3	Chromium	YES								MDH HRV	0.0125	0.0008				IRIS	0.01	Resp	nasal septum atrophy				MDH HRV	0.02	Resp	Upper and lower respiratory				1	0	1

	Cr	18540-29-9	Chromium (Hexavalent	YES	MDH HRV	0.0125	0.0008			IRIS	0.01	Resp	nasal septum atrophy		MDH HRV	0.02	Resp	Upper and lower respiratory		1	0	1
	Cr	18540-29-9-pm	Chromium (Hexavalent	YES	MDH HRV	0.0125	0.0008			IRIS	0.10	Resp	lower respiratory system		MDH HRV	1	Resp	Lower respiratory		1	0	1
SUR	Cr	CHROM-COMPS	Chromium Compound	YES	MDH HRV	0.0125	0.0008	1333-82-0	Chromic aci	IRIS	0.01	Resp	nasal septum atrophy	18540-29-9 Chromic aci	MDH HRV	0.02	Resp	Upper and lower respirato	1333-82-0 Chromic aci	1	1	1
		16065-83-1	Chromium(III) Compou	NO											ATSDR	0.1	Resp			0	0	0
SUR	PAH	218-01-9	Chrysene (Benzo(a)ph	YES	MDH RAA	0.00006	0.1													1	0	0
		87-29-6	Cinnamyl anthranilat	NO	CAL EPA	0.0000013	7.7													0	0	0
		10061-01-5	cis-1,3-Dichloropropen	NO	IRIS (2000)	0.000004	2.5			IRIS (2000)	20.00	Resp			ATSDR	36	Resp			0	0	1
SUR		8007-45-2	Coal Tar	NO	MDH HRV	0.0005	0.02	0-00-7	Coke Oven Emission											0	0	0

RASS version: 2020-12
No inputs on this page
Air Concentrations in ug/m

Risk value hierarchy: MDH (RAA | HBV | HRV) > EPA IRIS > CAL EPA > ATSDR > PPRTV > MPCA

Toxicity Values Reference Table

Surrogate Group	CAS or MPCA-ID	Chemical Name	Includes HAPs	Acute Air Reference	Acute Air Concentration	Acute General Endpoint	Specific Endpoint	Acute Footnote	Surrogate CAS	Surrogate Name	Cancer Based Air Reference	Cancer Unit Risk	Cancer Based Air Concentration (Risk of 1E-05)	Cancer Footnote	Surrogate CAS	Surrogate Name	Non-Cancer Chronic Air Reference	Non-Cancer Chronic Air Concentration	Non-Cancer General Endpoint	Non-Cancer Specific Endpoint	Non-Cancer Footnote	Non-Cancer Surrogate CAS	Non-Cancer Surrogate Name	Non-Cancer Sub-Chronic Air Reference	Non-Cancer Sub-Chronic Air Concentration	Non-Cancer Sub-Chronic General Endpoint	Non-Cancer Sub-Chronic Specific Endpoint	Non-Cancer Sub-Chronic Footnote	Non-Cancer Sub-Chronic Surrogate CAS	Non-Cancer Sub-Chronic Surrogate Name	Marked with "1" if applies: Persistent	Bioaccumulative	Developmental Toxicant	Respiratory Sensitizer
	7440-48-4	Cobalt	YES								PPRTV	0.009	0.0011				PPRTV	0.01	Systemic	Irritation	Decreased function			PPRTV	0.02	Systemic	Irritation	Decreased function			0	0	1
	0-00-7	Coke Oven Emission	YES								MDH HRV	0.0005	0.02																		0	0	0
Cu	7440-50-8	Copper	NO	CAL EPA	100	Resp	respiratory system																								0	0	0
SUR Cu	COPPER-COMP	Copper Compounds	NO	CAL EPA	100	Resp	respiratory system		7440-50-8	Copper																					0	0	0
	120-71-8	Cresidine, p-	NO								CAL EPA	0.000043	0.23																	0	0	0
SUR Cresols	108-39-4	Cresol, m-	YES														CAL EPA	600	Neuro	Nervous system		1319-77-3	Cresols/Cresylic acid (isomers and mixture							0	0	0
SUR Cresols	95-48-7	Cresol, o-	YES														CAL EPA	600	Neuro	Nervous system		1319-77-3	Cresols/Cresylic acid (isomers and mixture							0	0	0
SUR Cresols	106-44-5	Cresol, p-	YES														CAL EPA	600	Neuro	Nervous system		1319-77-3	Cresols/Cresylic acid (isomers and mixture							0	0	0
Cresol	1319-77-3	Cresols/Cresylic acid (i	YES														CAL EPA	600	Neuro	Nervous system										0	0	0
	98-82-8	Cumene	YES														IRIS	400	Kidney	increased kidney and adrenal weight				MDH HRV	4,000	Kidney, Rep	renal and endocrine system			0	0	0
	135-20-6	Cupferron	NO								CAL EPA	0.000063	0.16																	0	0	0
SUR CN	57-12-5	Cyanide (Cyanide ion,	YES	MDH HRV	700	Neuro	CNS	5	74-90-8	Hydrogen cyanide							MDH HRV (I	0.8	Neuro, Repr	nervous / endocrine syste	74-90-8	Hydrogen cyanide								0	0	0
SUR CN	CYANIDE-COMP	Cyanide Compound	YES	MDH HRV	700	Neuro	CNS	5	74-90-8	Hydrogen cyanide							MDH HRV (I	0.8	Neuro, Repr	nervous / endocrine syste	74-90-8	Hydrogen cyanide								0	0	0
	110-82-7	Cyclohexane	NO														IRIS	6,000	Repro	developmental (reduced pup weights				PPRTV	18,000	Repro	Reduced body weight of pups			0	0	0
	108-94-1	Cyclohexanon	NO														PPRTV	700	Systemic	Systemic: Adverse clinical signs (salivation, conjunc				PPRTV	7,000	Systemic	Adverse clinical signs (salivation, conjunctival cong			0	1	0
	27208-37-3	Cyclopenta[c,d]pyrene	NO								MDH RAA	0.00024	0.025																	1	0	0
	50-29-3	DDT	NO								IRIS	0.000097	0.1																	1	0	0
	615-05-4	Diaminoanisole, 2,4	NO								CAL EPA	0.0000066	1.5																	0	0	0
	101-80-4	Diaminodiphenyl ether,	NO								CAL EPA	0.00004	0.25																	0	1	1
	103-33-3	Diazene, Dipheny	NO								IRIS	0.000031	0.32																	0	0	0
PAH	226-36-8	Dibenz(a,h)acridin	YES								MDH RAA	9.996E-05	0.1																	1	0	0
PAH	224-42-0	Dibenz[a,j]acridine	YES								MDH RAA	9.996E-05	0.1																	1	0	0
PAH	53-70-3	Dibenz[a,h]anthracen	YES								MDH RAA	0.009996	0.001																	1	0	0
PAH	192-65-4	Dibenzo(a,e)pyrene	YES								MDH RAA	0.0003984	0.025																	1	0	0
PAH	189-64-0	Dibenzo(a,h)pyrene	YES								MDH RAA	0.0008964	0.011																	1	0	0
PAH	191-30-0	Dibenzo(a,l)pyrene	YES								MDH RAA	0.02988	0.00033																	1	0	0
PAH	194-59-2	Dibenzo(c,g)carbazole,	YES								MDH RAA	0.0009996	0.01																	1	0	0
PAH	5385-75-1	Dibenzo[a,e]fluoranthe	YES								MDH RAA	0.0008964	0.011																	1	0	0
PAH	189-55-9	Dibenzo[a,i]pyrene	YES								MDH RAA	0.0005976	0.017																	1	0	0
	96-12-8	Dibromo-3-chloropropa	YES								CAL EPA	0.002	0.005				IRIS	0.20	Repro	testicular effects				MDH HRV	2	Repro	male reproductive system			0	0	0
	764-41-0	Dichloro-2-butene, 1,4-	NO								PPRTV	0.0042	0.0024																	0	0	0
	1476-11-5	Dichloro-2-butene, cis-	NO								PPRTV	0.0042	0.0024																	0	0	0
	106-46-7	Dichlorobenzene(p), 1,	YES								CAL EPA	0.000011	0.91				MDH	60	Liver	increased liver weigh				MDH HRV	800	Liver	hepatic system			0	0	0
SUR	25321-22-6	Dichlorobenzene	YES								CAL EPA	0.000011	0.91		106-46-7	Dichloroben	MDH	60	Liver	increased liver weigh		106-46-7	Dichloroben	MDH HRV	800	Liver	hepatic system		106-46-7	Dichloroben	0	0	0
	91-94-1	Dichlorobenzidene, 3,3	YES								CAL EPA	0.00034	0.029																	0	0	0
	75-71-8	Dichlorodifluoromethan	NO																					PPRTV	1,000	Systemic	decreased body weight gain			0	0	0
	75-35-4	Dichloroethylene (1,1-)	YES														IRIS	200	Liver	Liver										0	0	0
	156-60-5	Dichloroethylene, trans	NO														MDH RAA	20	Immune	Immune system				PPRTV	400	Blood	Immune system			0	0	0
	542-75-6	Dichloropropene, 1,3-	YES								IRIS	0.000004	2.5				MDH HRV (I	20	Resp	Upper respiratory system				ATSDR	36	Resp	Respiratory			0	0	0
	78-88-6	Dichloropropene, 2,3-	NO	ATSDR	9	Resp	Respiratory																							0	0	0
	62-73-7	Dichlorvos	YES	ATSDR	18	Neuro	Neuro				CAL EPA	0.000083	0.12				MDH HRV	0.50	Neuro	Nervous system				ATSDR	2.7	Neuro	Neuro			0	0	0
	77-73-6	Dicyclopentadiene	NO																					MDH HRV	3	Kidney	renal system			0	0	0
	60-57-1	Dieldrin	NO								IRIS	0.0046	0.0022	10																1	0	0
	0-02-4	Diesel exhaust particul	NO														MDH HRV	5.00	Resp	Lower respir	6									0	0	0
	111-42-2	Diethanolamin	YES														CAL EPA	3.00	Resp, Blood	Respiratory system, hematologic				PPRTV	2	Systemic	Increased incidence of squamous metaplasia (level			0	0	0
Glycol	112-34-5	Diethylene Glycol Mon	NO														PPRTV	0.10	Liver	Hepatocellular vacuolizatio				PPRTV	1	Liver	Hepatocellular vacuolizatio			0	0	0
	111-90-0	Diethylene Glycol Mon	NO														PPRTV	0.30	Skin	Irritation				PPRTV	3	Systemic	Irritation			0	0	0
	75-37-6	Difluoroethane, 1,1-	NO														IRIS	40,000	Systemic	Systemic										0	0	0
	108-20-3	Diisopropyl Ether	NO														PPRTV	700	Systemic	Systemic				PPRTV	700	Repro	Rudimentary and short 14th ribs in fetal rats			0	0	0
	60-11-7	Dimethyl aminoazoben	YES								CAL EPA	0.0013	0.0077																	0	0	0
	68-12-2	Dimethyl formamide	YES														MDH HRV	30	Liver	Hepatic system				PPRTV	70	Liver	Elevated liver enzyme change			0	0	0
	108-01-0	Dimethylamino ethanol	NO																					MDH HRV	70	Resp	Upper respiratory			0	0	0
PAH	57-97-6	Dimethylbenz[a]anthra	YES								MDH RAA	0.0637	0.00016																	1	0	0
	57-14-7	Dimethylhydrazine, 1,1	YES																					PPRTV	0.008	Repro	Endometrial cysts			0	0	0
PAH	42397-64-8	Dinitropyrene, 1,6- (Ba	YES								MDH RAA	0.00996	0.001																	0	0	0
PAH	42397-65-9	Dinitropyrene, 1,8- (Ba	YES								MDH RAA	0.000996	0.01																	0	0	0
	121-14-2	Dinitrotoluene, 2,4-	YES								CAL EPA	0.000089	0.11																	0	0	0
	123-91-1	Dioxane, 1,4- (1,4-Diet	YES	MDH HRV	3,000	Eyes , Resp	irritant - eye and nasal				IRIS	0.000005	2				IRIS	30	Digest, Kidn	Alimentary system; kidney; cardiovascular system				ATSDR	720	Resp	Resp			0	0	0
	122-66-7	Diphenylhydrazine, 1,2	YES								IRIS	0.00022	0.045																	0	0	0
	106-89-8	Epichlorohydrin (l-Chlo	YES	CAL EPA	1,300	Resp , Eyes	eye and respiratory system				MDH HRV	1.25E-06	8				IRIS	1	Resp	nasal turbinate change				PPRTV	10	Resp	Changes in the nasal turbinate			0	0	0
	106-88-7	Epoxybutane, 1,2-	YES														MDH HRV	20	Resp	upper respiratory system										0	0	0
Glycol	110-80-5	Ethoxyethanol, 2- (ethy	YES	MDH HRV	400	Repro	Reproductive/developmenta										IRIS	200	Repro	decreased testis weight, seminiferous tubule dege				MDH HRV	60	Repro, Bloo	male reproductive and hematologic system			0	1	0
	141-78-6	Ethyl acetate	NO														PPRTV	70	Systemic	Decreased body weights, body-weight gains, food e				PPRTV	700	Systemic	Decreased body weights, body-weight gains, food e			0	0	0
	140-88-5	Ethyl Acrylate	YES														PPRTV	8	Resp	Dose-dependent histopathological lesions of the olf				PPRTV	8	Resp	Dose-dependent histopathological lesions of the olf			0	0	0
	100-41-4	Ethyl benzene	YES	MDH HRV	10,000	Repro, Neuro, Re	Reproductive/developmenta				CAL EPA	0.0000025	4				MDH	300	Neuro, Resp	Neuro, Resp, Eye				PPRTV	9,000	Auditory, Ne	Histopathological evidence of otoxicity without funct			0	1	0
	51-79-6	Ethyl carbamate (Ureth	YES								CAL EPA	0.00029	0.034																	0	0	0
	75-00-3	Ethyl chloride (Chloroe	YES	MDH HRV	100,000	Repro	Reproductive/developmenta										IRIS	10,000	Repro	delayed fetal ossification				PPRTV	4,000	Repro	Delayed fetal ossification			0	1	0
	97-63-2	Ethyl Methacrylate	NO														PPRTV	300	Repro	Decreased in maternal body weight gain				PPRTV	3,000	Repro	Decrease in maternal body weight gain			0	1	0
	106-93-4	Ethylene dibromide (Di	YES								MDH	0.0006	0.017				MDH	0.80	Repro, Resp	Repro, Resp										0	0	0
	107-06-2	Ethylene dichloride (1,2	YES								IRIS	0.000026	0.38				MDH	7.00	Liver	Hepatic system (liver)				PPRTV	70	Neuro	Neurobehavioral impairmen			0	0	0
	107-21-1	Ethylene glyco	YES	ATSDR	2,000	Kidney	Kidney										CAL EPA	400	Resp, Kidne	Respiratory system; kidney; developmen										0	0	0
	75-21-8	Ethylene oxide	YES								IRIS	0.003	0.0033				CAL EPA	30	Neuro	Nervous system				ATSDR	160	Kidney	Kidney			0	0	0
	96-45-7	Ethylene thiourea	YES								CAL EPA	0.000013	0.77																	0	0	0
	75-34-3	Ethylidene dichloride (1	YES								CAL EPA	0.0000016	6.3																	0	0	0
	206-44-0	Fluoranthene	YES								MDH RAA	7.968E-05	0.13																	0	0	0
	FLUORIDES	Fluorides (except hydro	NO														CAL EPA	13	Bone/Teeth,	Bone, teeth and respiratory										0	0	0
ALD	50-00-0	Formaldehyde	YES	MDH	50	Resp, Eyes	irritant - eye	4									MDH	9	Eyes, Resp	Respiratory	4			MDH	9	Eyes, Resp	Eye, nose irritation			0	0	0
	64-18-6	Formic Acid	NO																					PPRTV	0.9	Blood	Neutropenia and increased serum alkaline phospha			0	0	0
ALD	111-30-8	Glutaraldehyde	NO	ATSDR	4	Resp	Resp										CAL EPA	0.08	Resp	Respiratory system				ATSDR	0.12	Resp	Resp			0	0	1
SUR Glycol	0-01-2	Glycol ethers	YES	MDH HRV	90	Repro	Reproductive/developme	109-86-4	Methoxyethanol, 2- (ethylene glycol monomethyl ether EGME								IRIS	20	Repro	testicular effects		Glycol	Methoxyetha	MDH HRV	60	Repro, Bloo	male reproductive and he	109-86-4	Methoxyetha	0	1	0
	76-44-8	Heptachlor	YES														IRIS	0.0013	0.0077											1	0	0
	1024-57-3	Heptachlor epoxide	NO														IRIS	0.0026	0.0038											1	0	0
DF	35822-46-9	Heptachlorodibenzo-p-	YES								MDH RAA	4	0.0000025	2			MPCA	0.0040	Liver, Repro	Hepatic syst	2									1	0	0
SUR DF	00-08-5	Heptachlorodibenzodio	YES								MDH RAA	4	0.0000025	2	35822-46-9	Heptachloro	MPCA	0.0040	Liver, Repro	Hepatic syst	2	35822-46-9	Heptachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8						1	0	0
DF	67562-39-4	Heptachlorodibenzofur	YES								MDH RAA	4	0.0000025	2			MPCA	0.0040	Liver, Repro	Hepatic sys	2									1	0	0
DF	55673-89-7	Heptachlorodibenzofur	YES								MDH RAA	4	0.0000025	2			MPCA	0.0040	Liver, Repro	Hepatic syst	2									1	0	0
SUR DF	00-08-4	Heptachlorodibenzofur	YES								MDH RAA	4	0.0000025	2	67562-39-4	Heptachloro	MPCA	0.0040	Liver, Repro	Hepatic sys	2	67562-39-4	Heptachlorodibenzofuran, 1,2,3,4,6,7,8						1	0	0
	142-82-5	Heptane, N	NO														PPRTV	400	Auditory	Loss of hearing sensitivity				PPRTV	4,000	Auditory	Loss of hearing sensitivity			1	0	0
	118-74-1	Hexachlorobenzen	YES														IRIS	0.00046	0.022											0	0	0
	87-68-3	Hexachlorobutadien	YES														IRIS	0.000022	0.45											0	0	0
	608-73-1	Hexachlorocyclohexan	NO														IRIS	0.00051	0.02											0	0	0
	319-84-6	Hexachlorocyclohexan	NO														IRIS	0.0018	0.0056											0	0	0
	319-85-7	Hexachlorocyclohexan	NO														IRIS	0.00053	0.019											0	0	0
	77-47-4	Hexachlorocyclopentad	YES														IRIS	0.20	Resp	Suppurative inflammation of the nos				ATSDR	110	Resp	Resp			1	0	0
DF	39227-28-6	Hexachlorodibenzo-p-d	YES								MDH RAA	40	0.00000025	2			MPCA	0.0004	Liver, Repro	Hepatic syst	2, 10									1	0	0
DF	57653-85-7	Hexachlorodibenzo-p-d	YES								MDH RAA	1.3	0.0000077				MPCA	0.0004	Liver, Repro	Hepatic syst	2, 10									1	0	0
DF	19408-74-3	Hexachlorodibenzo-p-d	YES								MDH RAA	1.3	0.0000077				MPCA	0.0004	Liver, Repro	Hepatic syst	2, 10									1	0	0
SUR DF	00-08-3	Hexachlorodibenzodiox	YES								MDH RAA	40	0.00000025	2	39227-28-6	Hexachlorod	MPCA	0.0004	Liver, Repro	Hepatic syst	2, 10	39227-28-6	Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8						1	0	0
DF	70648-26-9	Hexachlorodibenzofura	YES								MDH RAA	40	0.00000025	2			MPCA	0.0004	Liver, Repro	Hepatic syst	2, 10									1	0	0
DF	57117-44-9	Hexachlorodibenzofura	YES								MDH RAA	40	0.00000025	2			MPCA	0.0004	Liver, Repro	Hepatic syst	2, 10									1	0	0

	DF	72918-21-9	Hexachlorodibenzofura	YES						MDH RAA	40	0.00000025	2			MPCA	0.0004	Liver, Repro	Hepatic syst	2, 10									1	0	0
	DF	60851-34-5	Hexachlorodibenzofura	YES						MDH RAA	40	0.00000025	2			MPCA	0.0004	Liver, Repro	Hepatic syst	2, 10									1	0	0
SUR	DF	00-08-2	Hexachlorodibenzofura	YES						MDH RAA	40	0.00000025	2	70648-26-9	Hexachlorod	MPCA	7,200	Liver, Repro	Hepatic syst	2, 10	70648-26-9	Hexachlorodibenzofuran, 1,2,3,4,7,8						1	0	0
		67-72-1	Hexachloroethan	YES	ATSDR	58,000	Repro	Reproductive/developmenta		CALEPA	0.00001	1				IRIS	30	Neuro	neurotoxicity			ATSDR	58,000	Neuro	Neuro			0	0	0
	DIIS	822-06-0	Hexamethylene-1,6-dii	YES	CALEPA	0	Resp	Resp								MDH HRV	0.01	Resp	upper and lo	4		ATSDR	0.21	Resp	Resp			0	0	1
		110-54-3	Hexane	NO												MDH	700	Neuro, Resp	nervous/upper respiratory sys.			PPRTV	2,000	Neuro	Peripheral neuropathology (decreased MCV at 12 w			0	0	0
		104-76-7	Hexanol, 1-,2-ethyl- (2-	NO												PPRTV	0.40	Resp	nasal epithelium			PPRTV	4	Resp	nasal epithelium			0	0	0
		591-78-6	Hexanone-2	NO												IRIS	30	Neuro	Nervous system									0	0	0
		302-01-2	Hydrazine	YES						MDH HRV	0.005	0.002				CAL EPA	0.20	Digest, Repr	Alimentary system; endocrine system			PPRTV	0.09	Blood	Hemosiderosis			0	0	0
		10034-93-2	Hydrazine sulfate	NO						MDH HRV	0.005	0.002																0	0	0

RASS version: 2020-12
No inputs on this page
Air Concentrations in ug/m

Risk value hierarchy: MDH (RAA | HBV | HRV) > EPA IRIS > CAL EPA > ATSDR > PPRTV > MPCA

Toxicity Values Reference Table

Surrogate Group	CAS or MPCA-ID	Chemical Name	Includes HAPs	Acute Air Reference	Acute Air Concentration	Acute General Endpoint	Specific Endpoint	Acute Footnote	Surrogate CAS	Surrogate Name	Cancer Based Air Reference	Cancer Unit Risk	Cancer Based Air Concentration (Risk of 1E-05)	Cancer Footnote	Surrogate CAS	Surrogate Name	Non-Cancer Chronic Air Reference	Non-Cancer Chronic Air Concentration	Non-Cancer General Endpoint	Non-Cancer Specific Endpoint	Non-Cancer Footnote	Non-Cancer Surrogate CAS	Non-Cancer Surrogate Name	Non-Cancer Sub-Chronic Air Reference	Non-Cancer Sub-Chronic Air Concentration	Non-Cancer Sub-Chronic General Endpoint	Non-Cancer Sub-Chronic Specific Endpoint	Non-Cancer Sub-Chronic Footnote	Non-Cancer Sub-Chronic Surrogate CAS	Non-Cancer Sub-Chronic Surrogate Name	Marked with "1" if applies: Persistent	Bioaccumulative	Developmental Toxicant	Respiratory Sensitizer
	7647-01-0	Hydrochloric acid (hydr	YES	MDH HRV	2,700	Resp , Eyes	irritant -Eye and respiratory system										MDH HRV	20	Resp	upper respiratory system											0	0	0
CN	74-90-8	Hydrogen cyanide	YES	MDH HRV	700	Neuro	CNS	5									MDH HRV (I	0.8	Neuro, Repr	nervous/endocrine system											0	0	0
	7664-39-3	Hydrogen fluoride (Hyd	YES	MDH HRV	240	Resp	irritant - respiratory system										CAL EPA	14	Bone/Teeth,	bone and teeth, respiratory system											0	0	0
	7783-07-5	Hydrogen selenide	NO	CAL EPA	5	Resp , Eyes	respiratory system; eye																							0	0	0
	7783-06-4	Hydrogen sulfide	NO	CAL EPA	42	Neuro, Resp	nervous system										IRIS	2	Resp	nasal mucosa inflammatio				MDH HRV	10	Resp	Upper respiratory				0	0	0
PAH	193-39-5	Indeno(1,2,3-cd)pyrene	YES								MDH RAA	0.0000697	0.14																	1	0	0
	5888-33-5	Isobornyl acrylate	NO														MI DEQ	14.00															
	78-59-1	Isophorone	YES														CAL EPA	2,000	Kidney, Dige	Development; kidney; alimentary system											0	0	0
	67-63-0	Isopropyl alcoho	NO	CAL EPA	3,200	Resp , Eyes	respiratory system; eye										MDH	200	Repro, Kidn	Kidney; developmen				PPRTV	7,000	Neuro	Increased mean cumulative motor activit				0	0	0
Pb	7439-92-1	Lead	YES								CAL EPA	0.000012	0.83				NAAQS	0.15	Repro, Neur	developmental nervous system cardiovascula				NAAQS	0.15	Repro, Card	developmental nervous system cardiovascula				1	0	0
SUR Cr, Pb	7758-97-6	Lead Chromate	YES								CAL EPA	0.15	0.000067				CAL EPA	0.20	Resp					MDH HRV	0.02	Resp	Upper and lower respirato	7440-47-3	Chromium		0	0	0
SUR Pb	LEAD-COMPS	Lead Compounds	YES								CAL EPA	0.000012	0.83		7439-92-1	Lead	NAAQS	0.15	Repro, Neur	developmental nervous system cardiovascula				NAAQS	0.15	Repro, Card	developmental nervous system cardiovascula				1	0	0
	58-89-9	Lindane (all isomers	YES								CAL EPA	0.00031	0.032																	1	0	0
	108-31-6	Maleic anhydride	YES														CAL EPA	0.70	Resp	Respiratory system											0	0	1
Mn	7439-96-5	Manganese	YES														MDH HRV	0.20	Neuro	nervous system											0	0	0
SUR Mn	NGANESE-COM	ManganeseCompound	YES														MDH HRV	0.20	Neuro	nervous system		7439-96-5	Manganese								0	0	0
Hg	7439-97-6	Mercury (elemental)	YES	CAL EPA	1	Repro , Neuro	nervous system, development										IRIS	0.30	Neuro	neurotoxicity											1	1	0
SUR Hg	ERCURY-COMP	Mercury Compounds	YES	CAL EPA	1	Repro , Neuro	nervous system, develop	7439-97-6	Mercury (elemental)								IRIS	0.30	Neuro	neurotoxicity		7439-97-6	Mercury (elemental)								1	1	0
	126-98-7	Methacrylonitrile	NO														PPRTV	30	Liver	Statistically significant higher liver weigh				PPRTV	300	Liver	Statistically significant higher liver weigh				0	0	0
	67-56-1	Methano	YES	MDH HRV	25,000	Neuro	CNS										IRIS	20,000	Repro	Developmen											0	0	0
Glycol	109-86-4	Methoxyethanol, 2- (et	YES	MDH HRV	90	Repro	Reproductive/developmenta										IRIS	20	Repro	testicular effects				MDH HRV	60	Repro, Bloo	male reproductive and hematologic system				0	1	0
	96-33-3	Methyl acrylate	NO														PPRTV	20	Resp	respiratory				PPRTV	20	Resp	respiratory				0	0	0
Glycol	110-49-6	Methyl Cellosolve Acet	NO														CAL EPA	90	Repro	Reproductive				PPRTV	60	Repro	Reproductive				0	0	0
	74-87-3	Methyl chloride (Chloro	YES	ATSDR	1,000	Neuro	Neuro										IRIS	90	Neuro	Cerebellar lesions				PPRTV	3,000	Systemic	Lesions				0	0	0
	71-55-6	Methyl chloroform (1,1,	YES	MDH	68,000	Neuro	CNS										IRIS	5,000	Liver	liver histopathologic change				IRIS	5,000	Liver	liver histopathologic change				0	0	0
	78-93-3	Methyl ethyl ketone (2-	NO	MDH HRV	10,000	Resp , Eyes	irritant - eye and respiratory system										IRIS	5,000	Repro	developmental (skeletal variations											0	0	0
	60-34-4	Methyl Hydrazine	YES																											0	0	0
	108-10-1	Methyl isobutyl ketone	YES														IRIS	3,000	Repro	reduced fetal body weight, skeletal variations, and increased fetal death in mice, and skeletal variations in rat											0	0	0
ISO	624-83-9	Methyl isocyanate	YES														CAL EPA	1	Repro, Resp	Respiratory system; reproductive system											0	0	0
	80-62-6	Methyl methacrylate	YES														MDH HRV	700	Resp	upper and lo 4											0	0	0
	1634-04-4	Methyl tert butyl ether	YES	ATSDR	7,200	Neuro	Neuro				CAL EPA	2.6E-07	38				IRIS	3,000	Liver, Kidne	liver and kidney effects				ATSDR	2,500	Neuro	Neuro				0	0	0
PAH	56-49-5	Methylcholanthrene, 3	YES								MDH RAA	0.0056	0.0018																	1	0	0
PAH	3697-24-3	Methylchrysene, 5-	YES								MDH RAA	0.0010	0.01																	1	0	0
	101-14-4	Methylene bis(2-chloro	YES								CAL EPA	0.00043	0.023																	0	0	0
	74-95-3	Methylene Bromide	NO																											0	0	0
	75-09-2	Methylene chloride (Di	YES	MDH HRV	10,000	Neuro	CNS				MDH	1E-08	1000				IRIS	600	Liver	hepatic vacuolatio											0	0	0
DIIS	101-68-8	Methylene diphenyl diis	YES	CAL EPA	12	Resp	Respiratory system										MDH HRV	0.60	Resp	upper and lo 4											0	0	1
	101-77-9	Methylenedianiline, 4,4	YES								CAL EPA	0.00046	0.022				CAL EPA	20	Eyes, Digest	Eyes; alimentary system											0	0	0
	90-94-8	Michler's ketone	NO								CAL EPA	0.00025	0.04																	0	0	0
	10595-95-6	N- Nitrosomethylethyla	NO								CAL EPA	0.00625	0.0016																	0	0	0
	924-16-3	N-Nitrosodi-n-butylami	NO								IRIS	0.0016	0.0062																	0	0	0
	621-64-7	N-Nitrosodi-n-propylam	NO								CAL EPA	0.002	0.005																	0	0	0
	55-18-5	N-Nitrosodiethylamin	NO								IRIS	0.043	0.00023																	0	0	0
	62-75-9	N-Nitrosodimethylamin	YES								IRIS	0.014	0.00071																	0	0	0
	86-30-6	N-Nitrosodiphenylamin	NO								CAL EPA	0.0000026	3.8																	0	0	0
	59-89-2	N-Nitrosomorpholin	YES								CAL EPA	0.0019	0.0053																	0	0	0
	100-75-4	N-Nitrosopiperidine	NO								CAL EPA	0.0027	0.0037																	0	0	0
	111-84-2	N-Nonane	NO														PPRTV	20	Systemic	Salivation, lacrimation, and marginally depressed b				PPRTV	200	Systemic	Salivation, lacrimation, and marginally depressed b				0	1	0
	64724-95-6	Naphtha, High Flash A	NO														PPRTV	100	Repro	Decreased maternal body weight versus controls.				PPRTV	1,000	Repro	Decreased maternal body weight versus controls				0	0	0
PAH	91-20-3	Naphthalen	YES	MDH HBV	200	Resp	respiratory				MDH RAA						MDH HBV	9	Resp	Nasal Effects, respiratory impacts											0	0	0
PAH	193-09-9	Naphtho[2,3-e]pyrene	YES								MDH RAA	0.0003	0.033																	0	0	0
SUR Ni	7440-02-0	Nicke	YES	MDH HRV (	0.2	Resp	irritant - respiratory syste	0-01-5	Nickel Comp		MDH HRV (IR	0.0005	0.02		12035-72-2	Nickel sulfid	CAL EPA	0.014	Resp, Blood	Respiratory system; hem		12035-72-2	Nickel sulfide (NiS								0	0	1
SUR Ni	NICKEL-COMPS	Nickel Compound	YES	MDH HRV (	0.2	Resp	irritant - respiratory system				MDH HRV (IR	0.0005	0.02		12035-72-2	Nickel sulfid	CAL EPA	0.014	Resp, Blood	Respiratory system; hem		12035-72-2	Nickel sulfide (NiS								0	0	1
SUR Ni	1313-99-1	Nickel oxide	YES	MDH HRV (	0.2	Resp	irritant - respiratory syste	0-01-5	Nickel Comp		CAL EPA	0.00026	0.038				CAL EPA	0.020	Resp, Blood	Respiratory system; hematopoietic system											0	0	1
SUR Ni	0-02-5	Nickel refinery dust fro	YES	MDH HRV (	0.2	Resp	irritant - respiratory syste	0-01-5	Nickel Comp		IRIS	0.00024	0.04				CAL EPA	0.014	Resp, Blood	Respiratory system; hem		12035-72-2	Nickel sulfide (NiS								0	0	1
SUR Ni	12035-72-2	Nickel sulfide (NI3S2	YES	MDH HRV (	0.2	Resp	irritant - respiratory syste	0-01-5	Nickel Comp		MDH HRV (IR	0.0005	0.02				CAL EPA	0.014	Resp, Blood	Respiratory system; hematopoietic system											0	0	1
	7697-37-2	Nitric acid	NO	MDH HRV (	86	Resp	irritant - respiratory system																							0	0	0
	139-13-9	Nitrilotriacetic acid	NO								CALEPA	0.0000015	6.7																	0	0	0
	18662-53-8	Nitrilotriacetic acid, tris	NO								CALEPA	0.0000029	3.4																	0	0	0
PAH	602-87-9	Nitroacenaphthene, 5	YES								MDH RAA	1.992E-05	0.5																	0	0	0
	88-74-4	Nitroaniline, 2	NO																					PPRTV	0.4	Eyes, Resp	Nasal and Eye irritation				0	0	0
	100-01-6	Nitroaniline, 4	NO														PPRTV	6	Blood	Methemoglobinemia				PPRTV	20	Blood	Methemoglobinemia				0	0	0
	98-95-3	Nitrobenzene	YES								IRIS	0.00004	0.25				IRIS	9	Resp	Bronchiolization of the alveoli and olfactory degeneratio											0	0	0
PAH	7496-02-8	Nitrochrysene, 6-	YES								MDH RAA	0.00996	0.001																	1	0	0
PAH	607-57-8	Nitrofluorene, 2-	YES								MDH RAA	9.96E-06	1																	0	0	0
	10102-44-0	Nitrogen dioxide (NO2	NO	MDH HBV	470	Resp	respiratory system										NAAQS	100	Resp	Respiratory system											0	0	0
	75-52-5	Nitromethane	NO								PPRTV	0.0000088	1.1				PPRTV	5	Resp	Hyaline degeneration in th erespiratory epitheliu				PPRTV	4	Resp	Hyaline droplets in the respiratory epithelium				0	0	0
	79-46-9	Nitropropane, 2-	NO														MDH HRV (I	20	Liver	hepatic system				PPRTV	70	Liver	Focal hepatocyte hypertrophy, hepatocyte hyperpla				0	0	0
PAH	5522-43-0	Nitropyrene, 1-	YES								MDH RAA	0.0000996	0.1																	1	0	0
PAH	57835-92-4	Nitropyrene, 4-	YES								MDH RAA	0.0000996	0.1																	0	0	0
	156-10-5	Nitrosodiphenylamine,	NO								CAL EPA	0.0000063	1.6																	0	0	0
DF	3268-87-9	Octachlorodibenzo-p-d	YES								MDH RAA	0.12	0.000083	2			MPCA	0.13	Liver, Repro	Hepatic syst	2, 10										1	0	0
DF	39001-02-0	Octachlorodibenzofura	YES								MDH RAA	0.12	0.000083	2			MPCA	0.13	Liver, Repro	Hepatic syst	2, 10										1	0	0
	10028-15-6	Ozone	NO	CAL EPA	180	Resp , Eyes	eye, respiratory																							1	0	0
	74472-37-0	PCB 114 (2,3,4,4,5 Pe	YES								CALEPA	0.019	0.00053				CAL EPA	1.30	Liver, Repro	Hepatic syst	11										1	0	0
	31508-00-6	PCB 118 (2,3,4,4,5 Pe	YES								CALEPA	0.0038	0.0026				CAL EPA	1.30	Liver, Repro	Hepatic syst	11										1	0	0
	65510-44-3	PCB 123 (2,3,4,4,5 Pe	YES								CALEPA	0.0038	0.0026				CAL EPA	1.30	Liver, Repro	Hepatic syst	11										1	0	0
	57465-28-8	PCB 126 (3,3,4,4,5 Pe	YES								CALEPA	3.8	0.0000026				CAL EPA	0.00	Liver, Repro	Hepatic syst	11										1	0	0
	38380-0804	PCB 156 (2,3,3,4,4,5 H	YES								CALEPA	0.019	0.00053				CAL EPA	1.30	Liver, Repro	Hepatic syst	11										1	0	0
	69782-90-7	PCB 157 (2,3,3,4,4,5 H	YES								CALEPA	0.019	0.00053				CAL EPA	1.30	Liver, Repro	Hepatic syst	11										1	0	0
	52663-72-6	PCB 167 (2,3,4,4,5,5 H	YES								CALEPA	0.00038	0.026				CAL EPA	1.30	Liver, Repro	Hepatic syst	11										1	0	0
	32774-16-6	PCB 169 (3,3,4,4,5,5 H	YES								CALEPA	0.38	0.0026				CAL EPA	0.00	Liver, Repro	Hepatic syst	11										1	0	0
	39635-31-9	PCB 189 (2,3,3,4,4,5,5	YES								CALEPA	0.0038	0.0026				CAL EPA	1.30	Liver, Repro	Hepatic syst	11										1	0	0
	32598-13-3	PCB 77 (3,3,4,4-Tetrac	YES								CALEPA	0.0038	0.0026				CAL EPA	0.40	Liver, Repro	Hepatic syst	11										1	0	0
	70362-50-4	PCB 81 (3,4,4,5 Tetrac	YES								CALEPA	0.0038	0.0026				CAL EPA	0.13	Liver, Repro	Hepatic syst	11										1	0	0
	32598-14-4	PCB105 (2,3,3,4,4 Pen	YES								CALEPA	0.0038	0.0026				CAL EPA	1.30	Liver, Repro	Hepatic syst	11										1	0	0
DF	40321-76-4	Pentachlorodibenzo-p-	YES								MDH RAA	400	0.000000025	2			MPCA	0.00	Liver, Repro	Hepatic syst	2, 10										1	0	0
SUR DF	00-08-1	Pentachlorodibenzodio	YES								MDH RAA	400	0.000000025	2	40321-76-4	Pentachloro	MPCA	0.00	Liver, Repro	Hepatic syst	2, 10	40321-76-4	Pentachlorodibenzo-p-dioxin, 1,2,3,7,8							1	0	0
DF	57117-41-6	Pentachlorodibenzofur	YES								MDH RAA	12	0.00000083	2			MPCA	0.00	Liver, Repro	Hepatic syst	2, 10										1	0	0
DF	57117-31-4	Pentachlorodibenzofur	YES								MDH RAA	120	0.000000083	2			MPCA	0.00	Liver, Repro	Hepatic sys	2, 10										1	0	0
SUR DF	00-09-0	Pentachlorodibenzofur	YES								MDH RAA	120	0.000000083	2	57117-31-4	Pentachloro	MPCA	0.00	Liver, Repro	Hepactic sys	2, 10	57117-31-4	Pentachlorodibenzofuran, 2,3,4,7,8							1	0	0
	87-86-5	Pentachloropheno	YES								CAL EPA	0.0000051	2																	0	0	0
	109-66-0	Pentane, n-	NO														PPRTV	1,000.00	Systemic					PPRTV	10,000	Systemic					0	0	0
SUR	ALIPHATIC-C5-C	Petroleum Hydrocarbo	NO	CAL EPA	660	Repro	Developmenta	106-99-0	Butadiene, 1		MDH HBV	0.00005	0.2	10	106-99-0	Butadiene, 1	IRIS	2.00	Repro	Ovarian atrophy	106-99-0	Butadiene, 1		PPRTV	2,000	Neuro	Decreased motor nerve conduction velocit				0	0	0
SUR	00-07-7 LIPHATIC-C9-C1	Petroleum Hydrocarbo	NO														PPRTV	100.00	Resp, Kidne	Nasal goblet cell hypertrophy and adrenal hyperpla				PPRTV	100	Resp, Kidne	Nasal goblet cell hypertrophy				0	0	0
SUR	AROMATIC-C6-C	Petroleum Hydrocarbo	NO								MDH HRV	7.692E-06	1.3		71-43-2	Benzene	PPRTV	30.00	Blood	Decreased lymphocytes				PPRTV	80	Blood	Decreased lymphocytes				0	0	0
	AROMATIC-C9-C1	Petroleum Hydrocarbo	NO														PPRTV	3.00	Resp	Nasal lesions				PPRTV	1,000	Repro	Decreased maternal body weight				0	0	0
PAH	85-01-8	Phenanthren	YES								MDH RAA																			1	0	0
	108-95-2	Pheno	YES	MDH HRV (	5,800	Resp , Eyes	irritant - eye and respiratory system										CAL EPA	200.00	Digest, Card	Alimentary system; cardiovascular system; kidney											0	0	0
	75-44-5	Phosgene	YES	MDH HRV (	4	Resp	irritant - resp	5									IRIS	0.30	Resp	Collagen staining indictive of fibrosi											0	0	0

		7803-51-2	Phosphine	YES									IRIS	0.30	Systemic	decreased body weight			MDH HRV (I	3	Systemic	decreased body weight		0	0	0
		7664-38-2	Phosphoric acid	NO									IRIS	10.00	Resp	bronchioloar fibrosis								0	0	0
		85-44-9	Phthalic anhydrid	YES									CAL EPA	20.00	Resp	Respiratory system								0	0	1
		59536-65-1	Polybrominated Biphen	NO		CALEPA	0.0086	0.0012																0	1	0
SUR		1336-36-3	Polychlorinated biphen	YES		CAL EPA	3.8	0.0000026					CAL EPA	0.00	Liver, Repro	Hepatic system (liver); re	57465-28-8	PCB 126						1	0	0
SUR	DF	00-08-0	Polychlorinated Dibenz	YES		MDH RAA	400	0.000000025	9, 10	1746-01-6	Tetrachlorod		CAL EPA	0.00	Liver, Repro	Hepatic syst	9, 10	1746-01-6	Tetrachlorodibenzo-p-dioxin, 2,3,7,8					1	0	0
SUR	DF	00-05-0	Polychlorinated Dibenz	YES		MDH RAA	400	0.000000025	1	1746-01-6	Tetrachlorod		CAL EPA	0.00	Liver, Repro	Hepatic syst	9, 10	1746-01-6	Tetrachlorodibenzo-p-dioxin, 2,3,7,8					1	0	0
SUR	DF	00-05-1	Polychlorinated Dibenz	YES		MDH RAA	120	0.000000083	2	57117-31-4	Pentachloro		MPCA	0.00	Liver, Repro	Hepactic sys	2, 10	57117-31-4	Pentachlorodibenzofuran, 2,3,4,7,8					1	0	0
SUR	PAH	130498-29-2	Polycyclic Aromatic Hy	YES		MDH RAA	0.0017857	0.0056																1	0	0
SUR	PAH	00-01-7	Polycyclic Organic Mat	YES		MDH RAA	8.929E-05	0.11	7															0	0	0

RASS version: 2020-12
No inputs on this page
Air Concentrations in ug/m

Risk value hierarchy: MDH (RAA | HBV | HRV) > EPA IRIS > CAL EPA > ATSDR > PPRTV > MPCA

Toxicity Values Reference Table

Surrogate	Group	CAS or MPCA-ID	Chemical Name	Includes HAPs	Acute Air Reference	Acute Air Concentration	Acute General Endpoint	Acute Specific Endpoint	Acute Footnote	Surrogate CAS	Surrogate Name	Cancer Based Air Reference	Cancer Unit Risk	Cancer Based Air Concentration (Risk of 1E-05)	Cancer Footnote	Cancer Surrogate CAS	Cancer Surrogate Name	Non-Cancer Chronic Air Reference	Non-Cancer Chronic Air Concentration	Non-Cancer General Endpoint	Non-Cancer Specific Endpoint	Non-Cancer Footnote	Non-Cancer Surrogate CAS	Non-Cancer Surrogate Name	Sub-Chronic Air Reference	Sub-Chronic Air Concentration	Sub-Chronic General Endpoint	Sub-Chronic Specific Endpoint	Sub-Chronic Footnote	Sub-Chronic Surrogate CAS	Sub-Chronic Surrogate Name	Marked with "1" if applies: Persistent	Bioaccumulative Toxicant	Developmental Toxicant	Respiratory Sensitizer
	DIIS	9016-87-9	Polymeric diphenylmet	NO	CALEPA	12	Resp	respiratory s	4									MDH HRV (I	0.60	Resp	upper and lo	4											0	0	1
		7758-01-2	Potassium bromate	NO								CAL EPA	0.00014	0.071																		0	0	0
		1120-71-4	Propane sultone, 1,3-	YES								CAL EPA	0.00069	0.014																		0	0	0
		57-57-8	Propiolactone, beta-	NO								CALEPA	0.004	0.0025																		0	0	0
		123-38-6	Propionaldehyde	YES														IRIS	8	Resp	Atrophy of olfactory epithelium											0	0	0
		115-07-1	Propylene	NO														CAL EPA	3,000	Resp	Respiratory system											0	0	0
		78-87-5	Propylene dichloride (1	YES	ATSDR	230	Resp	respiratory system				PPRTV	0.0000037	2.7				IRIS	4	Resp	nasal mucosa hyperplasi				MDH HRV (I	10	Resp	Upper respiratory				0	0	0
		107-98-2	Propylene Glycol Mono	NO														IRIS	2,000	Neuro	mild reversible sedation				MDH HRV (	20,000	Neuro	nervous system				0	0	0
		75-56-9	Propylene oxide	YES	CAL EPA	3,100	Resp , Repro , Ey	respiratory system; eye; reproductive/developmenta				MDH HRV (IR	3.333E-06	3				IRIS	30	Resp	nasal epithelial change											0	1	0
		930-55-2	Pyrrolidine, 1-Nitroso-	NO								IRIS	0.00061	0.016																		0	0	0
	Se	7782-49-2	Selenium	YES														CAL EPA	20	Digest, Card	Alimentary system; cardiovascular system; nervou											0	0	0
SUR	Se	0-01-9	Selenium Compound	YES														CAL EPA	20	Digest, Card	Alimentary system; cardio	7782-49-2	Selenium									0	0	0
		7631-86-9	Silica (crystalline, respi	NO														MDH HBV	3	Resp	respiratory											0	0	0
		1310-73-2	Sodium hydroxide	NO	MDH HRV (	8	Resp , Eyes , Ski	irritant - eye, skin, and respiratory system																								0	0	0
SUR	Cr	10588-01-9	Sodium Dichromate	YES								CAL EPA	0.15	0.000067				CAL EPA	0.20	Resp	Resp				MDH HRV	0.02	Resp	Upper and lower respirat		7440-47-3	Chromium	0	0	1
SUR	Cr	7789-06-2	Strontium chromate	YES								CAL EPA	0.15	0.000067				CAL EPA	0.20	Resp					MDH HRV	0.02	Resp	Upper and lower respirat		7440-47-3	Chromium	0	0	0
		100-42-5	Styrene	YES	MDH HRV (	21,000	Resp , Eyes	irritant - eye and respiratory system										MDH HRV (	900	Neuro	nervous system											0	0	0
		96-09-3	Styrene oxide	NO								CALEPA	0.000046	0.22																		0	0	1
		14808-79-8	Sulfates	NO	CAL EPA	120	Resp	respiratory system																								0	0	0
		126-33-0	Sulfolane	NO																					PPRTV	20	Resp, Neuro	respiratory and neurologica				0	0	0
		7446-09-5	Sulfur dioxide	NO	CAL EPA	660	Resp	respiratory system																								0	0	0
		7664-93-9	Sulfuric acid (aerosol fo	NO	CAL EPA	120	Resp	respritory system										CAL EPA	1	Resp	Respiratory system											0	0	0
		8014-95-7	Sulfuric Acid mixture w	NO	CAL EPA	120	Resp	respiratory system																								0	0	0
SUR	DF	00-09-1	TCDD Equivalents, 2,3,7	YES								MDH RAA	400	0.000000025	1	1746-01-6	Tetrachlorod	CAL EPA	0.00004	Liver, Repro	Hepatic syst	9, 10	1746-01-6	Tetrachlorodibenzo-p-dioxin, 2,3,7,8							1	0	0
		540-88-5	Tert-Butyl Acetate	NO								CALEPA	0.0000013	7.7																		0	0	0
SUR	DF	1746-01-6	Tetrachlorodibenzo-p-d	YES								MDH RAA	400	0.000000025	1			CAL EPA	0.00004	Liver, Repro	Hepatic syst	9, 10										1	0	0
SUR	DF	00-08-8	Tetrachlorodibenzodiox	YES								MDH RAA	400	0.000000025	1	1746-01-6	Tetrachlorod	CAL EPA	0.00004	Liver, Repro	Hepatic syst	9, 10	1746-01-6	Tetrachlorodibenzo-p-dioxin, 2,3,7,8							1	0	0
	DF	51207-31-9	Tetrachlorodibenzofura	YES								MDH RAA	40	0.00000025	2			MPCA	0.00040	Liver, Repro	Hepatic syst	2, 10										1	0	0
SUR	DF	00-08-6	Tetrachlorodibenzofura	YES								MDH RAA	40	0.00000025	2	51207-31-9	Tetrachlorod	MPCA	0.00040	Liver, Repro	Hepatic syst	2, 10	51207-31-9	Tetrachlorodibenzofuran, 2,3,7,8							1	0	0
		630-20-6	Tetrachloroethane, 1,1	NO								IRIS	0.0000074	1.4																		0	0	0
		79-34-5	Tetrachloroethane, 1,1	YES								IRIS	0.000058	0.17																		0	0	0
		127-18-4	Tetrachloroethylene (P	YES	MDH HRV (	20,000	Resp , Neuro , Ey	irritant - eye, and respiratory system; CNS				MDH RAA	0.000005	2				MDH RAA	15	Neuro	nervous syst	8			ATSDR	41	Neuro	CNS				0	0	0
		811-97-2	Tetrafluoroethane, 1,1,	NO														IRIS	80,000	Repro	leydig cell hyperplasia											0	0	0
		109-99-9	Tetrahydrofuran	NO														IRIS	2,000	Liver, Neuro	liver, central nervous											0	0	0
		62-55-5	Thioacetamide	NO								CAL EPA	0.0017	0.0059																		0	0	0
		62-56-6	Thiourea	NO								CALEPA	0.0000021	0.48																		0	1	1
		108-88-3	Toluene	YES	MDH HRV (	37,000	Resp , Neuro , Ey	irritant- eye and respiratory system; CNS										MDH ISV	4,000	Neuro, Resp	nervous / upper respiratory system				PPRTV	5,000	Systemic					0	0	0
	DIIS	584-84-9	Toluene-2,4-diisocyana	YES	CAL EPA	2	Resp	Respiratory system				CAL EPA	0.000011	0.91				CAL EPA	0.008	Resp	respiratory s	4										0	0	0
	DIIS	91-08-7	Toluene-2,6-diisocyana	NO	CAL EPA	2	Resp	Respiratory system				CAL EPA	0.000011	0.91				CAL EPA	0.008	Resp	respiratory s	4										0	0	0
		95-80-7	Toluene diamine, 2,4	YES								CAL EPA	0.0011	0.0091																		0	0	0
SUR	DIIS	26471-62-5	Toluenediisocyanate (	Some								CAL EPA	0.000011	0.91				CAL EPA	0.008	Resp	respiratory s	4	91-08-7	Toluene-2,6-diisocyanate							0	0	1
		95-53-4	Toluidine, o- (Methylan	NO								CALEPA	0.000051	0.2																		0	0	1
		8001-35-2	Toxaphene (chlorinate	YES								IRIS	0.00032	0.031																		1	0	0
		10061-02-6	trans-1,3-Dichloroprop	NO								IRIS (2000)	0.000004	2.5				IRIS (2000)	20	Resp					ATSDR	36	Resp					0	0	1
		120-82-1	Trichlorobenzene, 1,2,	YES														PPRTV	2	Repro	Significant changes in coproporphyrin and uroporph				PPRTV	20	Blood	Significant changes in coproporphyrin and uroporph				0	0	0
		79-00-5	Trichloroethane, 1,1,2-	YES								IRIS	0.000016	0.63				MDH ISV	0.2	Resp	Lesions in the olfactory epithelium				PPRTV	2	Resp	Lesions in the olfactory epithelium				0	0	0
		79-01-6	Trichloroethylene (TCE	YES	MDH HBV *	2	Repro	Reproductiv	12			MDH HBV	0.000005	2				MDH HBV	2	Repro, Syst	decreased thymus wt; increased fetal cardiac malfo				MDH HBV	2	Repro	Reproductive/developmenta				0	1	0
		75-69-4	Trichlorofluoromethane	NO														MDH ISV	1,000	Neuro	Small decrements in cognitive performanc				PPRTV	1,000	Neuro	Small decrements in cognitive performanc				0	0	0
		88-06-2	Trichlorophenol, 2,4,6-	YES								IRIS	0.0000031	3.2																		0	0	0
		96-18-4	Trichloropropane, 1,2,3	NO														IRIS	0.30	Resp	peribronchial lymphoid hyperplasi											0	0	0
		96-19-5	Trichloropropene, 1,2,3	NO														PPRTV	0.30	Eyes, Resp,	Irritation				PPRTV	3	Resp	Irritation				0	0	0
		76-13-1	Trichlorotrifluoroethane	NO														PPRTV	5,000	Systemic					PPRTV	50,000	Systemic					0	0	0
		121-44-8	Triethylamine	YES	MDH HRV (I	2,800	Eyes	irritant- eye; transient corneal edema										IRIS	7	Resp	no observed adverse effects (28-week); nasal pass				MDH HRV	70	Resp	Upper respiratory				0	0	0
		420-46-2	Trifluoroethane, 1,1,1-	NO														PPRTV	20,000	Systemic					PPRTV	200,000	Systemic					0	0	0
		526-73-8	Trimethylbenzene, 1,2,	NO														IRIS	60	Neuro	Decreased sensitivity to pain				IRIS	200	Neuro	Decreased sensitivity to pain				0	0	0
		95-63-6	Trimethylbenzene, 1,2,	NO														IRIS	60	Neuro	Decreased sensitivity to pain				IRIS	200	Neuro	Decreased sensitivity to pain				0	0	0
		108-67-8	Trimethylbenzene, 1,3,	NO														IRIS	60	Neuro	Decreased sensitivity to pain				IRIS	200	Neuro	Decreased sensitivity to pain				1	0	0
		URANIUM-SOLUB	Uranium (Soluble Salts	NO														ATSDR	0.04	Kidney					ATSDR	0.1	Kidney					0	0	0
		7440-61-1	Uranium, Insoluble Co	NO														ATSDR	0.80	Kidney, Resp					ATSDR	2	Kidney					0	0	0
	V	7440-62-2	Vanadium and Compo	NO	ATSDR	1	Resp											ATSDR	0.10	Resp												0	1	0
	V	1314-62-1	Vanadium Pentoxide, (	NO	MDH HRV (	30	Resp	Respiratory system				PPRTV	0.0083	0.0012				PPRTV	0.007	Resp	Chronic inflamationEpithelial hyperplasia				PPRTV	0.1	Resp	Alveolar epithelial hyperplasia, histiocytic infiltrate a				0	0	0
		108-05-4	Vinyl acetate	YES														MDH HRV (I	200	Resp	upper respiratory system				ATSDR	35	Resp	respiratory system				0	0	0
		593-60-2	Vinyl bromide	YES														IRIS	3	Liver	liver hypertrophy, basophilic and eosinophilic fo											0	0	0
		75-01-4	Vinyl chloride	YES	CAL EPA	180,000	Resp , Neuro , Ey	irritant - eye and respiratory system; CNS				MDH HRV	0.00001	1	10			IRIS	100	Liver	Liver cell polymorphism				ATSDR	77	Liver	Hepatic effects				0	0	0
	Xylenes	1330-20-7	Xylenes	YES	MDH HRV (	22,000	Resp , Neuro , Ey	irritant - eye and respiratory system; CNS										IRIS	100	Neuro, Resp	Nervous system; respiratory system				PPRTV	400	Neuro	Impaired motor coordination				0	0	0
SUR	Xylenes	108-38-3	Xylenes, m-	YES	MDH HRV (	22,000	Resp , Neuro , Ey	irritant - eye and respirato 1330-20-7	Xylenes									IRIS	100	Neuro, Resp	Nervous system; respiratory system				PPRTV	400	Neuro	Impaired motor coordinati 1330-20-7	Xylenes			0	0	0
SUR	Xylenes	95-47-6	Xylenes, o-	YES	MDH HRV (	22,000	Resp , Neuro , Ey	irritant - eye and respirato 1330-20-7	Xylenes									IRIS	100	Neuro, Resp	Nervous system; respiratory system				PPRTV	400	Neuro	Impaired motor coordinati 1330-20-7	Xylenes			0	0	0
SUR	Xylenes	106-42-3	Xylenes, p-	YES	MDH HRV (	22,000	Resp , Eyes , Neu	irritant - eye and respirato 1330-20-7	Xylenes									IRIS	100	Neuro, Resp	Nervous system; respiratory system				PPRTV	400	Neuro	Impaired motor coordinati 1330-20-7	Xylenes			0	0	0
SUR	Zn, Cr	13530-65-9	Zinc chromate	YES								MDH HRV	0.0125	0.0008				IRIS	0.008	Resp	nasal septum atrophy	1333-82-0	Chromic aci		MDH HRV	0.02	Resp	Upper and lower respirato	1333-82-0	Chromic aci		1	0	1

Footnotes & Glossary

1. An inhalation unit risk of 400 (ug/m3)-1 was calculated using the MDH and USEPA-recommended oral slope factor of 1.4E+06 (mg TCDD TEQ/kg/d-1)assuming an inhalation rate of 20.0 m3/day by a 70 kg adult and assuming 100% absorption.
2. Dioxin and furan congener concentrations were calculated using the World Health Organization's 2005 Toxic Eqivalency Factor (TEF) scheme to weight each compound according to its toxicity relative to 2,3,7,8-TC
3. "Petroleum Hydrocarbon, Aliphatic" value was derived based on Inhalation Studies on Dearomatized Petroleum Streams in: Development of Fraction Specific Reference Doses and Reference Concentrations from Total Petroleum Hydrocarbons, Volume 4, Total Petroleum Hydrocarbon Working Group Series. The value can be applied to aliphatic petroleum mixtures containing primarily C9 - C16 and minimal aro
4. This chronic value may not provide protection for previously-sensitized individua
5. Acute MDH HRV is for irritancy, but there is little difference between the level where mild irritancy occurs and levels where more severe adverse health effects occ
6. The chronic HRV for diesel particulates was not developed as protective for potential cancer effect
7. Inhalation unit risk assumes POM mixture is 5% as toxic as benzo(a)pyrene - Based on guidance provided in EPA's "Air Toxics Risk Assessment Reference Library Volume 2 - Facility-Specific Assessment" http://www.epa.gov/ttn/fera/risk_atra_main.ht
9. This Cal OEHHA memo (http://www.oehha.ca.gov/air/chronic_rels/pdf/mJED2WH.pdf) was adopted on February 23, 2000 and includes the chronic inhalation REL (ug/m3) for Chlorinated dioxins (1746-01-6) and dibenzo furans (5120-73-19). http://www.oehha.ca.gov/air/hot_spots is more gene
10. Considered or adjusted for early life exposure.
11. 2011 CalEPA adopted WHO Equivalents and calculated individual PCB congeners from the
12. The averaging period used for this health benchmark is 24-hrs

MPCA # - An ID number assigned by MPCA
HRV - Minnesota Department of Health Health Risk Valu
HBV - Minnesota Health Department Health Based Valu
IRIS - EPA Integrated Risk Information System
CAL EPA - California Office of Environmetal Health Hazard Assessmen
HEAST - EPA Health Effects Assessment Summary Table
MPCA - Minnesota Pollution Control Agency derived valu

Consolidated list of health endpoints as shown on the summary tab

End point	End points include
Eyes	Related to eyes/sight
Resp	Respiratory system, Olfactory, Lungs, Nasal system, Nasal septum atrophy, nasal epithelial change
Cardio	Cardiovascula
Kidney	Rena
Repro	Developmental/reproductive/endocrine/fetotoxicit
Blood	Hemetological, blood, immune system, lymph syste
Skin	
Neuro	Neurological/CN
Digest	Allmentary/digestive

Bone/Teeth
Ethanol specific
Systemic
Liver
Auditory

RASS version: 2020-12
No inputs on this page

CAS# or MPCA#	Chemical Name	Resident Noncancer	Resident Cancer	Urban Gardener Noncancer	Urban Gardener Cancer	Farmer Noncancer	Farmer Cancer
202-94-8	11H-Benz[b,c]aceanthrylene	0	0	0	0	0	0
202-98-2	4H-Cyclopenta[d,e,f]chrysene	0	0	0	0	0	0
75-07-0	Acetaldehyde	0	0	0	0	0	0
60-35-5	Acetamide	0	0	0	0	0	0
67-64-1	Acetone	0	0	0	0	0	0
75-86-5	Acetone Cyanohydrin	0	0	0	0	0	0
75-05-8	Acetonitrile	0	0	0	0	0	0
53-96-3	Acetylaminofluorene, 2-	0	0	0	0	0	0
107-02-8	Acrolein	0	0	0	0	0	0
79-06-1	Acrylamide	0	0	0	0	0	0
3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-nitro-2-furyl)-	0	0	0	0	0	0
79-10-7	Acrylic acid	0	0	0	0	0	0
107-13-1	Acrylonitrile	0	0	0	0	0	0
111-69-3	Adiponitrile	0	0	0	0	0	0
ALDEHYDES	Aldehydes	0	0	0	0	0	0
309-00-2	Aldrin	1	0	10	7	10	7
ALIPHATIC-MID	Aliphatic Hydrocarbon Streams (Midrange	0	0	0	0	0	0
107-05-1	Allyl chloride	0	0	0	0	0	0
7429-90-5	Aluminum	0	0	0	0	0	0
712-68-5	Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazol,	0	0	0	0	0	0
6109-97-3	Amino-9-ethylcarbazolehydrochloride, 3	0	0	0	0	0	0
117-79-3	Aminoanthraquinone, 2-	0	0	0	0	0	0
7664-41-7	Ammonia	0	0	0	0	0	0
62-53-3	Aniline	0	0	0	0	0	0
191-26-4	Anthanthrene	0	0	0	0	0	0
7440-36-0	Antimony	0.01	0	0.014	0	0.02	0
NTIMONY-COM	Antimony Compounds	0.01	0	0.014	0	0.02	0
1309-64-4	Antimony trioxide	0.01	0	0.014	0	0.02	0
140-57-8	Aramite	0	0	0	0	0	0
7440-38-2	Arsenic	0.1	0.008	0.16	0.012	0.28	0.022
RSENIC-COMP	Arsenic Compounds	0.1	0.008	0.16	0.012	0.28	0.022
1327-53-3	Arsenic Trioxide	0.1	0.008	0.16	0.012	0.28	0.022
7784-42-1	Arsine	0	0	0	0	0	0
1332-21-4	Asbestos (units in fibers)	0	0	0	0	0	0
1332-21-4-LAA	Asbestos, Libby Amphibole (units in fibers	0	0	0	0	0	0
123-77-3	Azodicarbonamide	0	0	0	0	0	0
10294-40-3	Barium Chromate	0	0	0	0	0	0.02
199-54-2	Benz[e]aceanthrylene	0	0	0	0	0	0
202-33-5	Benz[j]aceanthrylene	0	0	0	0	0	0
211-91-6	Benz[l]aceanthrylene	0	0	0	0	0	0
71-43-2	Benzene	0	0	0	0	0	0
92-87-5	Benzidine	0	0	0	0	0	0
205-82-3	Benzo(j)fluoranthene	0	0	0	0	0	0
207-08-9	Benzo(k)fluoranthene	0	0.7	0	0.99	0	260
56-55-3	Benzo[a]anthracene	0	0.33	0	0.43	0	48
50-32-8	Benzo[a]pyrene	0	0.37	0	0.54	0	170
205-99-2	Benzo[b]fluoranthene	0	0.3	0	0.4	0	9.9
205-12-9	Benzo[c]fluorene	0	0.4	0	10	0	9.9
191-24-2	Benzo[g,h,i]perylene	0	0	0	0	0	0
65-85-0	Benzoic Acid	0	0	0	0	0	0
100-44-7	Benzyl chloride	0	0	0	0	0	0
7440-41-7	Beryllium	0	0	0	0.1	0	0.14
RYLLIUM-COM	Beryllium Compounds	0	0	0	0.1	0	0.14
13510-49-1	Beryllium sulfate	0	0	0	0	0	0
111-44-4	Bis(2-chloroethyl)ether	0	0	0	0	0	0
117-81-7	Bis(2-ethylhexyl)phthalate (DEHP	0	0	0	0	0	0
542-88-1	Bis(chloromethyl)ether	0	0	0	0	0	0
7440-42-8	Boron And Borates Only	0	0	0	0	0	0
10294-34-5	Boron Trichloride	0	0	0	0	0	0
7637-07-2	Boron Trifluoride	0	0	0	0	0	0
108-86-1	Bromobenzene	0	0	0	0	0	0
74-97-5	Bromochloromethane	0	0	0	0	0	0
75-27-4	Bromodichloromethane	0	0	0	0	0	0
75-25-2	Bromoform	0	0	0	0	0	0
74-83-9	Bromomethane	0	0	0	0	0	0
106-94-5	Bromopropane, 1-	0	0	0	0	0	0
106-99-0	Butadiene, 1,3-	0	0	0	0	0	0

RASS version: 2020-12
No inputs on this page

CAS# or MPCA#	Chemical Name	Resident Noncancer	Resident Cancer	Urban Gardener Noncancer	Urban Gardener Cancer	Farmer Noncancer	Farmer Cancer
78-92-2	Butyl alcohol, sec-	0	0	0	0	0	0
111-76-2	Butyl Cellosolve (ethylene glycol monobut	0	0	0	0	0	0
25013-16-5	Butylated hydroxyanisol	0	0	0	0	0	0
3068-88-0	Butyrolactone, beta	0	0	0	0	0	0
7440-43-9	Cadmium	0	0	0	0	0	0
ADMIUM-COMP	Cadmium Compounds	0	0	0	0	0	0
13765-19-0	Calcium Chromate	0	0	0	0	0	0.02
105-60-2	Caprolactum	0	0	0	0	0	0
75-15-0	Carbon disulfide	0	0	0	0	0	0
630-08-0	Carbon Monoxide	0	0	0	0	0	0
56-23-5	Carbon tetrachloride	0	0	0	0	0	0
463-58-1	Carbonyl sulfide	0	0	0	0	0	0
111-15-9	Cellosolve Acetate (ethylene glycol mono	0	0	0	0	0	0
1306-38-3	Cerium Oxide and Cerium Compounds	0	0	0	0	0	0
12789-03-6	Chlordane or (57-74-9)	1	1	7	9	7	9
115-28-6	Chlorendic acid	0	0	0	0	0	0
108171-26-2	Chlorinated Paraffins (C12, 60% Chlorine)	0	0	0	0	0	0
7782-50-5	Chlorine	0	0	0	0	0	0
10049-04-4	Chlorine Oxide (CLO2)	0	0	0	0	0	0
75-68-3	Chloro-1,1-difluoroethane, 1- (HCFC-142b	0	0	0	0	0	0
563-47-3	Chloro-2-methylpropene, 3-	0	0	0	0	0	0
95-83-0	Chloro-o-phenylenediamine, 4	0	0	0	0	0	0
95-69-2	Chloro-o-toluidine, p-	0	0	0	0	0	0
532-27-4	Chloroacetophenone, 2	0	0	0	0	0	0
108-90-7	Chlorobenzene	0	0	0	0	0	0
98-56-6	Chlorobenzotrifluoride, 4-	0	0	0	0	0	0
75-45-6	Chlorodifluoromethane (HCFC-22)	0	0	0	0	0	0
67-66-3	Chloroform	0	0	0	0	0	0
107-30-2	Chloromethyl Methyl Ether	0	0	0	0	0	0
88-73-3	Chloronitrobenzene, o	0	0	0	0	0	0
100-00-5	Chloronitrobenzene, p	0	0	0	0	0	0
76-06-2	Chloropicrin	0	0	0	0	0	0
126-99-8	Chloroprene	0	0	0	0	0	0
1333-82-0	Chromic acid mists and dissolved Cr(VI) a	0	0	0	0	0	0.02
7440-47-3	Chromium	0	0	0	0	0	0.02
18540-29-9	Chromium (Hexavalent)	0	0	0	0	0	0.02
18540-29-9-pm	Chromium (Hexavalent) - Particulate	0	0	0	0	0	0.02
CHROM-COMP	Chromium Compounds	0	0	0	0	0	0.02
16065-83-1	Chromium(III) Compounds	0	0	0	0	0	0
218-01-9	Chrysene (Benzo(a)phenanthrene	0	0.53	0	0.7	0	7.9
87-29-6	Cinnamyl anthranilate	0	0	0	0	0	0
10061-01-5	cis-1,3-Dichloropropene	0	0	0	0	0	0
8007-45-2	Coal Tar	0	0	0	0	0	0
7440-48-4	Cobalt	0	0	0	0	0	0
0-00-7	Coke Oven Emissions	0	0	0	0	0	0
7440-50-8	Copper	0	0	0	0	0	0
OPPER-COMP	Copper Compounds	0	0	0	0	0	0
120-71-8	Cresidine, p-	0	0	0	0	0	0
108-39-4	Cresol, m-	0	0	0	0	0	0
95-48-7	Cresol, o-	0	0	0	0	0	0
106-44-5	Cresol, p-	0	0	0	0	0	0
1319-77-3	Cresols/Cresylic acid (isomers and mixtur	0	0	0	0	0	0
98-82-8	Cumene	0	0	0	0	0	0
135-20-6	Cupferron	0	0	0	0	0	0
57-12-5	Cyanide (Cyanide ion, Inorganic cyanides,	0	0	0	0	0	0
YANIDE-COMP	Cyanide Compounds	0	0	0	0	0	0
110-82-7	Cyclohexane	0	0	0	0	0	0
108-94-1	Cyclohexanone	0	0	0	0	0	0
27208-37-3	Cyclopenta[c,d]pyrene	0	0	0	0	0	0
50-29-3	DDT	8	2	380	200	380	200
615-05-4	Diaminoanisole, 2,4-	0	0	0	0	0	0
101-80-4	Diaminodiphenyl ether, 4,4-	0	0	0	0	0	0
103-33-3	Diazene, Dipheny	0	0	0	0	0	0
226-36-8	Dibenz(a,h)acridine	0	20	0	30	0	12480
224-42-0	Dibenz(a,j)acridine	0	20	0	30	0	12480
53-70-3	Dibenz[a,h]anthracene	0	20	0	20	0	8520
192-65-4	Dibenzo(a,e)pyrene	0	7	0	10	0	2300

RASS version: 2020-12
No inputs on this page

CAS# or MPCA#	Chemical Name	Resident Noncancer	Resident Cancer	Urban Gardener Noncancer	Urban Gardener Cancer	Farmer Noncancer	Farmer Cancer
189-64-0	Dibenzo(a,h)pyrene	0	0.17	0	0.3	0	50
191-30-0	Dibenzo(a,l)pyrene	0	50	0	83	0	17410
194-59-2	Dibenzo(c,g)carbazole, 7H	0	0	0	0	0	0
5385-75-1	Dibenzo[a,e]fluoranthene	0	0	0	0	0	0
189-55-9	Dibenzo[a,i]pyrene	0	0.11	0	0.2	0	30
96-12-8	Dibromo-3-chloropropane, 1,2-	0	0	0	0	0	0
764-41-0	Dichloro-2-butene, 1,4-	0	0	0	0	0	0
1476-11-5	Dichloro-2-butene, cis-1,4-	0	0	0	0	0	0
106-46-7	Dichlorobenzene(p), 1,4-	0	0	0	0	0	0
25321-22-6	Dichlorobenzenes	0	0	0	0	0	0
91-94-1	Dichlorobenzidene, 3,3-	0	0	0	0	0	0
75-71-8	Dichlorodifluoromethane (CFC-12)	0	0	0	0	0	0
75-35-4	Dichloroethylene (1,1-) (Vinylidene chlorid	0	0	0	0	0	0
156-60-5	Dichloroethylene, trans-1,2-	0	0	0	0	0	0
542-75-6	Dichloropropene, 1,3-	0	0	0	0	0	0
78-88-6	Dichloropropene, 2,3-	0	0	0	0	0	0
62-73-7	Dichlorvos	0	0	0	0	0	0
77-73-6	Dicyclopentadiene	0	0	0	0	0	0
60-57-1	Dieldrin	2	7	9	40	9	40
0-02-4	Diesel exhaust particulate	0	0	0	0	0	0
111-42-2	Diethanolamine	0	0	0	0	0	0
112-34-5	Diethylene Glycol Monobutyl Ethe	0	0	0	0	0	0
111-90-0	Diethylene Glycol Monoethyl Ethe	0	0	0	0	0	0
75-37-6	Difluoroethane, 1,1-	0	0	0	0	0	0
108-20-3	Diisopropyl Ether	0	0	0	0	0	0
60-11-7	Dimethyl aminoazobenzen	0	0	0	0	0	0
68-12-2	Dimethyl formamide	0	0	0	0	0	0
108-01-0	Dimethylamino ethanol, 2-	0	0	0	0	0	0
57-97-6	Dimethylbenz[a]anthracene, 7,12	0	0.37	0	0.54	0	160
57-14-7	Dimethylhydrazine, 1,1-	0	0	0	0	0	0
42397-64-8	Dinitropyrene, 1,6- (BaP)	0	0	0	0	0	0
42397-65-9	Dinitropyrene, 1,8- (BaP)	0	0	0	0	0	0
121-14-2	Dinitrotoluene, 2,4-	0	0	0	0	0	0
123-91-1	Dioxane, 1,4- (1,4-Diethylene dioxide	0	0	0	0	0	0
122-66-7	Diphenylhydrazine, 1,2	0	0	0	0	0	0
106-89-8	Epichlorohydrin (l-Chloro-2,3-epoxypropa	0	0	0	0	0	0
106-88-7	Epoxybutane, 1,2	0	0	0	0	0	0
110-80-5	Ethoxyethanol, 2- (ethylene glycol monoet	0	0	0	0	0	0
141-78-6	Ethyl acetate	0	0	0	0	0	0
140-88-5	Ethyl Acrylate	0	0	0	0	0	0
100-41-4	Ethyl benzene	0	0	0	0	0	0
51-79-6	Ethyl carbamate (Urethane)	0	0	0	0	0	0
75-00-3	Ethyl chloride (Chloroethane	0	0	0	0	0	0
97-63-2	Ethyl Methacrylate	0	0	0	0	0	0
106-93-4	Ethylene dibromide (Dibromoethane	0	0	0	0	0	0
107-06-2	Ethylene dichloride (1,2-Dichloroethane	0	0	0	0	0	0
107-21-1	Ethylene glyco	0	0	0	0	0	0
75-21-8	Ethylene oxide	0	0	0	0	0	0
96-45-7	Ethylene thiourea	0	0	0	0	0	0
75-34-3	Ethylidene dichloride (1,1-Dichloroethane	0	0	0	0	0	0
206-44-0	Fluoranthene	0	0	0	0	0	0
FLUORIDES	Fluorides (except hydrogen fluoride	0	0	0	0	0	0
50-00-0	Formaldehyde	0	0	0	0	0	0
64-18-6	Formic Acid	0	0	0	0	0	0
111-30-8	Glutaraldehyde	0	0	0	0	0	0
0-01-2	Glycol ethers	0	0	0	0	0	0
76-44-8	Heptachlor	0	0	0	0	0	0
1024-57-3	Heptachlor epoxid	1	0	30	20	30	20
35822-46-9	Heptachlorodibenzo-p-dioxin, 1,2,3,4,6,7,	3	0.16	4	0.23	90	6
00-08-5	Heptachlorodibenzodioxin, All Isomer	3	0.16	4	0.23	90	6
67562-39-4	Heptachlorodibenzofuran, 1,2,3,4,6,7,8-	4.4	0.25	6	0.35	420	30
55673-89-7	Heptachlorodibenzofuran, 1,2,3,4,7,8,9-	10	0.66	20	0.96	2160	130
00-08-4	Heptachlorodibenzofuran, All Isomers	10	0.66	20	0.96	2160	130
142-82-5	Heptane, N	3	0.16	4	0.23	90	6
118-74-1	Hexachlorobenzene	0	0	0	0	0	0
87-68-3	Hexachlorobutadiene	0	0	0	0	0	0
608-73-1	Hexachlorocyclohexane (technical grade	0	0	0	0	0	0

RASS version: 2020-12
No inputs on this page

CAS# or MPCA#	Chemical Name	Resident Noncancer	Resident Cancer	Urban Gardener Noncancer	Urban Gardener Cancer	Farmer Noncancer	Farmer Cancer
319-84-6	Hexachlorocyclohexane, alpha	0	0	0	0	0	0
319-85-7	Hexachlorocyclohexane, beta-1,2,3,4,5,6	0	0	0	0	0	0
77-47-4	Hexachlorocyclopentadien	0	0	0	0	0	0
39227-28-6	Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8	4.7	0.28	7	0.4	410	30
57653-85-7	Hexachlorodibenzo-p-dioxin, 1,2,3,6,7,8	6	0	9	0.02	790	2
19408-74-3	Hexachlorodibenzo-p-dioxin, 1,2,3,7,8,9	4.7	0.26	7	0.365	470	30
00-08-3	Hexachlorodibenzodioxins, All Isomer	6	0.28	7	0.4	790	30
70648-26-9	Hexachlorodibenzofuran, 1,2,3,4,7,8	7	0.35	9	0.5	570	30
57117-44-9	Hexachlorodibenzofuran, 1,2,3,6,7,8	7.2	0.36	9	0.5	570	40
72918-21-9	Hexachlorodibenzofuran, 1,2,3,7,8,9	10	0.49	10	0.7	980	60
60851-34-5	Hexachlorodibenzofuran, 2,3,4,6,7,8	7.4	0.37	10	0.5	630	40
00-08-2	Hexachlorodibenzofurans, All Isomer	10	0.49	10	0.7	980	60
67-72-1	Hexachloroethane	0	0	0	0	0	0
822-06-0	Hexamethylene-1,6-diisocyanat	0	0	0	0	0	0
110-54-3	Hexane	0	0	0	0	0	0
104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl-1-hexanol	0	0	0	0	0	0
591-78-6	Hexanone-2	0	0	0	0	0	0
302-01-2	Hydrazine	0	0	0	0	0	0
10034-93-2	Hydrazine sulfate	0	0	0	0	0	0
7647-01-0	Hydrochloric acid (hydrogen chloride	0	0	0	0	0	0
74-90-8	Hydrogen cyanide	0	0	0	0	0	0
7664-39-3	Hydrogen fluoride (Hydrofluoric acid	0	0	0	0	0	0
7783-07-5	Hydrogen selenide	0	0	0	0	0	0
7783-06-4	Hydrogen sulfide	0	0	0	0	0	0
193-39-5	Indeno(1,2,3-cd)pyrene	0	0.14	0	0.2	0	10
78-59-1	Isophorone	0	0	0	0	0	0
67-63-0	Isopropyl alcoho	0	0	0	0	0	0
7439-92-1	Lead	4.3	7.7	6.5	12	19	34
7758-97-6	Lead Chromate	4.3	7.7	6.5	12	19	34
LEAD-COMPS	Lead Compounds	4.3	7.7	6.5	12	19	34
58-89-9	Lindane (all isomers)	0	0	0	0	0	0
108-31-6	Maleic anhydride	0	0	0	0	0	0
7439-96-5	Manganese	0	0	0	0	0	0
NGANESE-CO	Manganese Compounds	0	0	0	0	0	0
7439-97-6	Mercury (elemental)	0	0	0	0	0	0
ERCURY-COM	Mercury Compounds	0	0	0	0	0	0
126-98-7	Methacrylonitrile	0	0	0	0	0	0
67-56-1	Methanol	0	0	0	0	0	0
109-86-4	Methoxyethanol, 2- (ethylene glycol mono	0	0	0	0	0	0
96-33-3	Methyl acrylate	0	0	0	0	0	0
110-49-6	Methyl Cellosolve Acetate	0	0	0	0	0	0
74-87-3	Methyl chloride (Chloromethane	0	0	0	0	0	0
71-55-6	Methyl chloroform (1,1,1-Trichloroethane)	0	0	0	0	0	0
78-93-3	Methyl ethyl ketone (2-Butanone	0	0	0	0	0	0
60-34-4	Methyl Hydrazine	0	0	0	0	0	0
108-10-1	Methyl isobutyl ketone (Hexone	0	0	0	0	0	0
624-83-9	Methyl isocyanate	0	0	0	0	0	0
80-62-6	Methyl methacrylate	0	0	0	0	0	0
1634-04-4	Methyl tert butyl ether	0	0	0	0	0	0
56-49-5	Methylcholanthrene, 3-	0	0.17	0	0.24	0	40
3697-24-3	Methylchrysene, 5-	0	0.39	0	0.6	0	200
101-14-4	Methylene bis(2-chloroaniline), 4,4-	0	0	0	0	0	0
74-95-3	Methylene Bromide	0	0	0	0	0	0
75-09-2	Methylene chloride (Dichloromethane	0	0	0	0	0	0
101-68-8	Methylene diphenyl diisocyanate (MDI	0	0	0	0	0	0
101-77-9	Methylenedianiline, 4,4-	0	0	0	0	0	0
90-94-8	Michler's ketone	0	0	0	0	0	0
10595-95-6	N- Nitrosomethylethylamine	0	0	0	0	0	0
924-16-3	N-Nitrosodi-n-butylamine	0	0	0	0	0	0
621-64-7	N-Nitrosodi-n-propylamine	0	0	0	0	0	0
55-18-5	N-Nitrosodiethylamine	0	0	0	0	0	0
62-75-9	N-Nitrosodimethylamine	0	0	0	0	0	0
86-30-6	N-Nitrosodiphenylamine	0	0	0	0	0	0
59-89-2	N-Nitrosomorpholine	0	0	0	0	0	0
100-75-4	N-Nitrosopiperidine	0	0	0	0	0	0
111-84-2	N-Nonane	0	0	0	0	0	0
64724-95-6	Naphtha, High Flash Aromatic (HFAN)	0	0	0	0	0	0

RASS version: 2020-12
No inputs on this page

CAS# or MPCA#	Chemical Name	Resident Noncancer	Resident Cancer	Urban Gardener Noncancer	Urban Gardener Cancer	Farmer Noncancer	Farmer Cancer
91-20-3	Naphthalene	0	0	0	0	0	0
193-09-9	Naphtho[2,3-e]pyrene	0	0	0	0	0	0
7440-02-0	Nickel	0	0	0	0	0	0
NICKEL-COMPS	Nickel Compounds	0	0	0	0	0	0
1313-99-1	Nickel oxide	0	0	0	0	0	0
0-02-5	Nickel refinery dust from the pyrometallurg	0	0	0	0	0	0
12035-72-2	Nickel sulfide (NI3S2)	0	0	0	0	0	0
7697-37-2	Nitric acid	0	0	0	0	0	0
139-13-9	Nitrilotriacetic acid	0	0	0	0	0	0
18662-53-8	Nitrilotriacetic acid, trisodium salt monohy	0	0	0	0	0	0
602-87-9	Nitroacenaphthene, 5-	0	0	0	0	0	0
88-74-4	Nitroaniline, 2-	0	0	0	0	0	0
100-01-6	Nitroaniline, 4-	0	0	0	0	0	0
98-95-3	Nitrobenzene	0	0	0	0	0	0
7496-02-8	Nitrochrysene, 6-	0	0	0	0	0	0
607-57-8	Nitrofluorene, 2-	0	0	0	0	0	0
10102-44-0	Nitrogen dioxide (NO2	0	0	0	0	0	0
75-52-5	Nitromethane	0	0	0	0	0	0
79-46-9	Nitropropane, 2-	0	0	0	0	0	0
5522-43-0	Nitropyrene, 1-	0	0	0	0	0	0
57835-92-4	Nitropyrene, 4-	0	0	0	0	0	0
156-10-5	Nitrosodiphenylamine, p	0	0	0	0	0	0
3268-87-9	Octachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8,	4.3	0.18	4	0.26	120	6.8
39001-02-0	Octachlorodibenzofuran, 1,2,3,4,6,7,8,9-	3.8	0.19	4	0.26	130	8.3
10028-15-6	Ozone	0	0	0	0	0	0
74472-37-0	PCB 114 (2,3,4,4,5 Pentachlorobiphenyl)	0	3	0	3	0.1	30
31508-00-6	PCB 118 (2,3,4,4,5 Pentachlorobiphenyl)	0	3	0	3	0.1	30
65510-44-3	PCB 123 (2,3,4,4,5 Pentachlorobiphenyl)	0	3	0	3	0.1	30
57465-28-8	PCB 126 (3,3,4,4,5 Pentachlorobiphenyl)	0	3	0	3	0.1	30
38380-0804	PCB 156 (2,3,3,4,4,5 Hexachlorobiphenyl	0	3	0	3	0.1	30
69782-90-7	PCB 157 (2,3,3,4,4,5 Hexachlorobiphenyl	0	3	0	3	0.1	30
52663-72-6	PCB 167 (2,3,4,4,5,5 Hexachlorobiphenyl	0	3	0	3	0.1	30
32774-16-6	PCB 169 (3,3,4,4,5,5 Hexachlorobiphenyl	0	3	0	3	0.1	30
39635-31-9	PCB 189 (2,3,3,4,4,5,5 Heptachlorobiphe	0	3	0	3	0.1	30
32598-13-3	PCB 77 (3,3,4,4-Tetrachlorobiphenyl)	0	3	0	3	0.1	30
70362-50-4	PCB 81 (3,4,4,5 Tetrachlorobiphenyl)	0	3	0	3	0.1	30
32598-14-4	PCB105 (2,3,3,4,4 Pentachlorobiphenyl)	0	3	0	3	0.1	30
40321-76-4	Pentachlorodibenzo-p-dioxin, 1,2,3,7,8	20	0.79	22	1.1	2290	140
00-08-1	Pentachlorodibenzodioxins, All Isomer	20	0.79	20	1.1	2290	140
57117-41-6	Pentachlorodibenzofuran, 1,2,3,7,8-	260	1	310	1	20350	120
57117-31-4	Pentachlorodibenzofuran, 2,3,4,7,8-	260	1	330	1.5	20000	120
00-09-0	Pentachlorodibenzofurans, All Isomers	260	1	330	1.5	20350	120
87-86-5	Pentachloropheno	0	0	0	0	0	0
109-66-0	Pentane, n-	0	0	0	0	0	0
LIPHATIC-C5-C	Petroleum Hydrocarbons, Aliphatic Low (	0	0	0	0	0	0
LIPHATIC-C9-C	Petroleum Hydrocarbons, Aliphatic Mediu	0	0	0	0	0	0
ROMATIC-C6-C	Petroleum Hydrocarbons, Aromatic Low (	0	0	0	0	0	0
ROMATIC-C9-C	Petroleum Hydrocarbons, Aromatic Mediu	0	0	0	0	0	0
85-01-8	Phenanthrene	0	0	0	0	0	0
108-95-2	Phenol	0	0	0	0	0	0
75-44-5	Phosgene	0	0	0	0	0	0
7803-51-2	Phosphine	0	0	0	0	0	0
7664-38-2	Phosphoric acid	0	0	0	0	0	0
85-44-9	Phthalic anhydride	0	0	0	0	0	0
59536-65-1	Polybrominated Biphenyl	0	0	0	0	0	0
1336-36-3	Polychlorinated biphenyls (Aroclors unspe	0	3	0	3	0.1	30
00-08-0	Polychlorinated Dibenzo-P-Dioxins And F	260	1	330	2	20350	120
00-05-0	Polychlorinated Dibenzodioxins, Tota	50	2	60	3	3420	200
00-05-1	Polychlorinated Dibenzofurans, Tota	260	1	330	2	20350	120
130498-29-2	Polycyclic Aromatic Hydrocarbons (PAH	0	3	0	10	0	390
00-01-7	Polycyclic Organic Matter (POM)	0	0	0	0	0	0
9016-87-9	Polymeric diphenylmethane diisocyanat	0	0	0	0	0	0
7758-01-2	Potassium bromate	0	0	0	0	0	0
1120-71-4	Propane sultone, 1,3-	0	0	0	0	0	0
57-57-8	Propiolactone, beta	0	0	0	0	0	0
123-38-6	Propionaldehyde	0	0	0	0	0	0
115-07-1	Propylene	0	0	0	0	0	0

RASS version: 2020-12
No inputs on this page

CAS# or MPCA#	Chemical Name	Resident Noncancer	Resident Cancer	Urban Gardener Noncancer	Urban Gardener Cancer	Farmer Noncancer	Farmer Cancer
78-87-5	Propylene dichloride (1,2-Dichloropropane	0	0	0	0	0	0
107-98-2	Propylene Glycol Monomethyl Ethe	0	0	0	0	0	0
75-56-9	Propylene oxide	0	0	0	0	0	0
930-55-2	Pyrrolidine, 1-Nitroso-	0	0	0	0	0	0
7782-49-2	Selenium	0.09	0	0.2	0	4.31	0
0-01-9	Selenium Compounds	0	0	0	0	0	0
7631-86-9	Silica (crystalline, respirable, PM4	0	0	0	0	0	0
1310-73-2	Sodium hydroxide	0	0	0	0	0	0
10588-01-9	Sodium Dichromate	0	0	0	0	0	0.02
7789-06-2	Strontium chromate	0	0	0	0	0	0.02
100-42-5	Styrene	0	0	0	0	0	0
96-09-3	Styrene oxide	0	0	0	0	0	0
14808-79-8	Sulfates	0	0	0	0	0	0
126-33-0	Sulfolane	0	0	0	0	0	0
7446-09-5	Sulfur dioxide	0	0	0	0	0	0
7664-93-9	Sulfuric acid (aerosol forms only)	0	0	0	0	0	0
8014-95-7	Sulfuric Acid mixture w. sulfur trioxide (ole	0	0	0	0	0	0
00-09-1	TCDD Eqivalents, 2,3,7,8-	50	2	60	3	3420	200
540-88-5	Tert-Butyl Acetate	0	0	0	0	0	0
1746-01-6	Tetrachlorodibenzo-p-dioxin, 2,3,7,8	50	2	60	3	3420	200
00-08-8	Tetrachlorodibenzodioxins, All Isomer	50	2	60	3	3420	200
51207-31-9	Tetrachlorodibenzofuran, 2,3,7,8-	120	4	130	6	4280	250
00-08-6	Tetrachlorodibenzofurans, All Isomers	120	4	130	6	4280	250
630-20-6	Tetrachloroethane, 1,1,1,2-	0	0	0	0	0	0
79-34-5	Tetrachloroethane, 1,1,2,2-	0	0	0	0	0	0
127-18-4	Tetrachloroethylene (Perchloroethylene	0	0	0	0	0	0
811-97-2	Tetrafluoroethane, 1,1,1,2-	0	0	0	0	0	0
109-99-9	Tetrahydrofuran	0	0	0	0	0	0
62-55-5	Thioacetamide	0	0	0	0	0	0
62-56-6	Thiourea	0	0	0	0	0	0
108-88-3	Toluene	0	0	0	0	0	0
584-84-9	Toluene-2,4-diisocyanate	0	0	0	0	0	0
91-08-7	Toluene-2,6-diisocyanate	0	0	0	0	0	0
95-80-7	Toluene diamine, 2,4-	0	0	0	0	0	0
26471-62-5	Toluenediisocyanate (mixed isomers	0	0	0	0	0	0
95-53-4	Toluidine, o- (Methylaniline, 2-)	0	0	0	0	0	0
8001-35-2	Toxaphene (chlorinated camphene	0	0	0	0	0	0
10061-02-6	trans-1,3-Dichloropropene	0	0	0	0	0	0
120-82-1	Trichlorobenzene, 1,2,4-	0	0	0	0	0	0
79-00-5	Trichloroethane, 1,1,2-	0	0	0	0	0	0
79-01-6	Trichloroethylene (TCE)	0	0	0	0	0	0
75-69-4	Trichlorofluoromethane (CFC-11)	0	0	0	0	0	0
88-06-2	Trichlorophenol, 2,4,6-	0	0	0	0	0	0
96-18-4	Trichloropropane, 1,2,3-	0	0	0	0	0	0
96-19-5	Trichloropropene, 1,2,3-	0	0	0	0	0	0
76-13-1	Trichlorotrifluoroethane, 1,1,2- (CFC-13)	0	0	0	0	0	0
121-44-8	Triethylamine	0	0	0	0	0	0
420-46-2	Trifluoroethane, 1,1,1-	0	0	0	0	0	0
526-73-8	Trimethylbenzene, 1,2,3-	0	0	0	0	0	0
95-63-6	Trimethylbenzene, 1,2,4-	0	0	0	0	0	0
108-67-8	Trimethylbenzene, 1,3,5-	0	0	0	0	0	0
RANIUM-SOLUB	Uranium (Soluble Salts)	0	0	0	0	0	0
7440-61-1	Uranium, Insoluble Compounds	0	0	0	0	0	0
7440-62-2	Vanadium and Compounds	0	0	0	0	0	0
1314-62-1	Vanadium Pentoxide, (V2O5	0	0	0	0	0	0
108-05-4	Vinyl acetate	0	0	0	0	0	0
593-60-2	Vinyl bromide	0	0	0	0	0	0
75-01-4	Vinyl chloride	0	0	0	0	0	0
1330-20-7	Xylenes	0	0	0	0	0	0
108-38-3	Xylenes, m-	0	0	0	0	0	0
95-47-6	Xylenes, o-	0	0	0	0	0	0
106-42-3	Xylenes, p-	0	0	0	0	0	0
13530-65-9	Zinc chromate	0	0	0	0	0	0.02
95-47-6	Xylenes, o-	0	0	0	0	0	0
106-42-3	Xylenes, p-	0	0	0	0	0	0
13530-65-9	Zinc chromate	0	0	0	0	0	0.02

RASS version: 2020-12
No inputs on this page

CAS# or MPCA#	Chemical Name	Early life adjustment needed	Toxicity value source	Notes
60-35-5	Acetamide	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
53-96-3	Acetylaminofluorene, 2-	Yes	CAL EPA	Value developed earlier than CalEPA early life guidance
3688-53-7	Acrylamide, 2-(2-furyl)-3-	Yes	CAL EPA	Value developed earlier than CalEPA early life guidance
107-13-1	Acrylonitrile	Yes	HRV	Updated prior to 2008
309-00-2	Aldrin	Yes	IRIS	Updated prior to 2005
107-05-1	Allyl chloride	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
712-68-5	Amino-5-(5-nitro-2-furyl)-	Yes	CAL EPA	Value developed earlier than CalEPA early life guidance
6109-97-3	Amino-9-ethylcarbazoleh	Yes	CAL EPA	Value developed earlier than CalEPA early life guidance
117-79-3	Aminoanthraquinone, 2-	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
62-53-3	Aniline	Yes	CAL EPA	Toxicity values not based on a lifetime exposure.
140-57-8	Aramite	Yes	IRIS	Updated prior to 2005
1332-21-4	Asbestos (units in fibers)	Yes	IRIS	Unit risk based on occupation exposures, not early life
1332-21-4-LAA	Asbestos, Libby Amphibo	Yes	IRIS	Unit risk based on occupation exposures, not early life
10294-40-3	Barium Chromate	Yes	CAL EPA	Unit risk based on occupation exposures, not early life
71-43-2	Benzene	No	HRV	ADAFs were not applied to the inhalation HRV in the RASS
92-87-5	Benzidine	Yes	HRV	Updated prior to 2008
100-44-7	Benzyl chloride	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
7440-41-7	Beryllium	Yes	HRV	Exposure study was occupational, adults. (IRIS documentation)
BERYLLIUM-CO	Beryllium Compounds	Yes	HRV	Exposure study was occupational, adults. (IRIS documentation)
111-44-4	Bis(2-chloroethyl)ether	Yes	IRIS	Updated prior to 2005
117-81-7	Bis(2-ethylhexyl)phthalat	Yes	CAL EPA	Toxicity values not based on a lifetime exposure.
542-88-1	Bis(chloromethyl)ether	Yes	MDH HRV	Updated prior to 2008
75-27-4	Bromodichloromethane	Yes	CAL EPA	Value developed earlier than CalEPA early life guidance
75-25-2	Bromoform	Yes	IRIS	Updated prior to 2005
25013-16-5	Butylated hydroxyanisole	Yes	CAL EPA	Value developed earlier than CalEPA early life guidance
3068-88-0	Butyrolactone, beta-	Yes	CAL EPA	Value developed earlier than CalEPA early life guidance
7440-43-9	Cadmium	Yes	HRV	Exposure study was occupational, adults. (IRIS documentation)
CADMIUM-COM	Cadmium Compounds	Yes	HRV	Exposure study was occupational, adults, mutagenic studies inconclusive. (IRIS documentation)
12789-03-6	Chlordane or (57-74-9)	Yes	IRIS	Updated prior to 2005
115-28-6	Chlorendic acid	Yes	CAL EPA	Value developed earlier than CalEPA early life guidance
108171-26-2	Chlorinated Paraffins (C1	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
563-47-3	Chloro-2-methylpropene,	Yes	CAL EPA	Updated prior to 2005
67-66-3	Chloroform	Yes	IRIS	Updated prior to 2005
107-30-2	Chloromethyl Methyl Ethe	Yes	CAL EPA	Updated prior to 2005
95-83-0	Chloro-o-phenylenediami	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
95-69-2	Chloro-o-toluidine, p-	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
1333-82-0	Chromic acid mists and d	Yes	HRV	EPA determined mutagen
7440-47-3	Chromium	Yes	HRV	Exposure study was occupational, adults, mutagenic studies inconclusive. (IRIS documentation)
18540-29-9	Chromium (Hexavalent)	Yes	HRV	EPA determined mutagen
18540-29-9-pm	Chromium (Hexavalent) -	Yes	MDH HRV	EPA determined mutagen
CHROM-COMP	Chromium Compounds	Yes	HRV	EPA determined mutagen
87-29-6	Cinnamyl anthranilate	Yes	CAL EPA	Updated prior to 2005
10061-01-5	cis-1,3-Dichloropropene	Yes	IRIS (2000)	Updated prior to 2005
8007-45-2	Coal Tar	Yes	HRV	Updated prior to 2008
0-00-7	Coke Oven Emissions	Yes	HRV	Updated prior to 2008
120-71-8	Cresidine, p-	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
135-20-6	Cupferron	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
50-29-3	DDT	Yes	IRIS	Updated prior to 2005
615-05-4	Diaminoanisole, 2,4-	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
101-80-4	Diaminodiphenyl ether, 4,	Yes	CAL EPA	Update prior to 2005
103-33-3	Diazene, Diphenyl	Yes	IRIS	Updated prior to 2005
96-12-8	Dibromo-3-chloropropane	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
764-41-0	Dichloro-2-butene, 1,4-	Yes	PPRTV	Positive mutagenicity tests.
1476-11-5	Dichloro-2-butene, cis-1,4	Yes	PPRTV	Positive mutagenicity tests.
106-46-7	Dichlorobenzene(p), 1,4-	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
25321-22-6	Dichlorobenzenes	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
25321-22-6	Dichlorobenzenes	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
91-94-1	Dichlorobenzidene, 3,3-	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
542-75-6	Dichloropropene, 1,3-	Yes	IRIS	Updated prior to 2005
62-73-7	Dichlorvos	Yes	CAL EPA	Updated prior to 2005
60-57-1	Dieldrin	Yes	IRIS	Updated prior to 2005
60-11-7	Dimethyl aminoazobenze	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
121-14-2	Dinitrotoluene, 2,4-	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
122-66-7	Diphenylhydrazine, 1,2-	Yes	IRIS	Updated prior to 2005
106-89-8	Epichlorohydrin (l-Chloro-	Yes	HRV	Updated prior to 2008
51-79-6	Ethyl carbamate (Urethan	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
106-93-4	Ethylene dibromide (Dibr	Yes	HRV	Updated prior to 2008
107-06-2	Ethylene dichloride (1,2-D	Yes	IRIS	Updated prior to 2005
75-21-8	Ethylene oxide	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
96-45-7	Ethylene thiourea	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
75-34-3	Ethylidene dichloride (1,1	Yes	CAL EPA	Toxicity values not based on a lifetime exposure.
50-00-0	Formaldehyde	Yes	MDH	EPA Toxicological review (3/17/2010)
76-44-8	Heptachlor	Yes	IRIS	Updated prior to 2005
1024-57-3	Heptachlor epoxide	Yes	IRIS	Updated prior to 2005
118-74-1	Hexachlorobenzene	Yes	IRIS	Updated prior to 2005
87-68-3	Hexachlorobutadiene	Yes	IRIS	Updated prior to 2005
608-73-1	Hexachlorocyclohexane (	Yes	IRIS	Updated prior to 2005
319-84-6	Hexachlorocyclohexane,	Yes	IRIS	Updated prior to 2005
319-85-7	Hexachlorocyclohexane,	Yes	IRIS	Updated prior to 2005
302-01-2	Hydrazine	Yes	HRV	Updated prior to 2008
10034-93-2	Hydrazine sulfate	Yes	HRV	Updated prior to 2008
7439-92-1	Lead	Yes	CAL EPA	Toxicity values not based on a lifetime exposure.
7758-97-6	Lead Chromate	Yes	HRV	EPA determined mutagen
LEAD-COMPS	Lead Compounds	Yes	CAL EPA	Toxicity values not based on a lifetime exposure.
58-89-9	Lindane (all isomers)	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
1634-04-4	Methyl tert butyl ether	Yes	CAL EPA	Toxicity values not based on a lifetime exposure.
101-14-4	Methylene bis(2-chloroan	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
101-77-9	Methylenedianiline, 4,4-	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
90-94-8	Michler's ketone	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
10595-95-6	N- Nitrosomethylethylami	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
7440-02-0	Nickel	Yes	HRV	Toxicity studies of worker exposures (not lifetime), Linear carcinogen (EPA IRIS documentation)
NICKEL-COMP	Nickel Compounds	Yes	HRV	Toxicity studies of worker exposures (not lifetime), Linear carcinogen (EPA IRIS documentation)
0-02-5	Nickel refinery dust from t	Yes	IRIS	Toxicity studies of worker exposures (not lifetime), Linear carcinogen (EPA IRIS documentation)
12035-72-2	Nickel sulfide (NI3S2)	Yes	HRV	Toxicity studies of worker exposures (not lifetime), Linear carcinogen (EPA IRIS documentation)
139-13-9	Nitrilotriacetic acid	Yes	CALEPA	Updated prior to 2005
18662-53-8	Nitrilotriacetic acid, trisod	Yes	CALEPA	Updated prior to 2005

156-10-5	Nitrosodiphenylamine, p-	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
55-18-5	N-Nitrosodiethylamine	Yes	IRIS	Updated prior to 2005
62-75-9	N-Nitrosodimethylamine	Yes	IRIS	Updated prior to 2005
924-16-3	N-Nitrosodi-n-butylamine	Yes	IRIS	Updated prior to 2005
621-64-7	N-Nitrosodi-n-propylamin	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
86-30-6	N-Nitrosodiphenylamine	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
59-89-2	N-Nitrosomorpholine	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.
100-75-4	N-Nitrosopiperidine	Yes	CAL EPA	Toxicity value based on less than a lifetime exposure.

RASS version: 2020-12

Values in units of ug/m^3, unless otherwise noted

Date	CAS	Chemical Name / RASS Update	Change	Tox Endpoint	Previous value	New value	Previous Ref. Source	New Ref. Source
Dec-2020	10102-44-0	Nitrogen dioxide (NO2)	New value	Longterm non-cancer		100	NA	EPA NAAQS
Dec-2020	57-12-5	Cyanide (Cyanide ion, Inorganic cyanides, Isocyanide)	New value	Longterm non-cancer	3	0.8	MDH HRV	IRIS 2010
Dec-2020	CYANIDE-COMPS	Cyanide Compounds	New value	Longterm non-cancer	3	0.8	MDH HRV	IRIS 2010
Dec-2020	71-43-2	Benzene	New value	Cancer	1.3	0.8	MDH HRV	MDH HBV (2020)
Dec-2020	71-43-2	Benzene	New value	Acute	1000	30	MDH HRV	MDH HBV (2020)
Dec-2020	71-43-2	Benzene	New value	Subchronic	80	8	PPRTV	MDH HBV (2020)
Dec-2020	71-43-2	Benzene	New value	Longterm non-cancer	30	3	IRIS	MDH HBV (2020)
Jul-2020	**	All carcinogens with toxicity values unadjusted for early life exposures.	Age adjustment factor applied to long-term cancer risk calculations (i.e. Cancer risks are multiplied by 1.6)	cancer				
Jul-2020	7784-42-1	Arsine	new value	cancer		0.002		MDH HRV
Jul-2020	50-32-8	Benzo[a]pyrene	new value	non_cancer		0.002		IRIS
Jul-2020	111-44-4	Bis(2-chloroethyl)ether	new value	cancer		0.03		IRIS
Jul-2020	111-44-4	Bis(2-chloroethyl)ether	new value	subchronic		120		ATSDR
Jul-2020	111-76-2	Butyl Cellosolve (ethylene glycol monobutyl ether)	value update	acute	14000	4700	CAL EPA	CAL EPA
Jul-2020	111-76-2	Butyl Cellosolve (ethylene glycol monobutyl ether)	value update	non_cancer	13000	1600	HRV	MDH HRV (IRIS 2010)
Jul-2020	111-76-2	Butyl Cellosolve (ethylene glycol monobutyl ether)	new value	subchronic		160		CALEPA (2018)
Jul-2020	75-15-0	Carbon disulfide	value update	non_cancer	700	800	HRV	MDH ISV (CALEPA 2002)
Jul-2020	67-66-3	Chloroform	value update	acute	150	100	HRV	MDH ISV (ATSDR 1997)
Jul-2020	106-46-7	Dichlorobenzene(p), 1,4-	value update	non_cancer	800	60	IRIS	MDH
Jul-2020	25321-22-6	Dichlorobenzenes	value update	non_cancer	800	60	IRIS	MDH
Jul-2020	156-60-5	Dichloroethylene, trans-1,2-	new value	non_cancer		20		MDH RAA
Jul-2020	156-60-5	Dichloroethylene, trans-1,2-	new value	subchronic		200		MDH RAA
Jul-2020	542-75-6	Dichloropropene, 1,3-	new value	subchronic		36		ATSDR
Jul-2020	62-73-7	Dichlorvos	new value	acute		18		ATSDR
Jul-2020	62-73-7	Dichlorvos	new value	cancer		0.12		CAL EPA
Jul-2020	62-73-7	Dichlorvos	new value	subchronic		2.7		ATSDR
Jul-2020	57-97-6	Dimethylbenz[a]anthracene, 7,12-	new value	cancer		0.00016		MDH RAA
Jul-2020	123-91-1	Dioxane, 1,4- (1,4-Diethylene dioxide)	new value	subchronic		720		ATSDR
Jul-2020	100-41-4	Ethyl benzene	value update	non_cancer	1000	300	IRIS	MDH
Jul-2020	106-93-4	Ethylene dibromide (Dibromoethane)	value update	cancer	0.05	0.017	HRV	MDH
Jul-2020	106-93-4	Ethylene dibromide (Dibromoethane)	value update	non_cancer	9	0.8	IRIS	MDH
Jul-2020	107-06-2	Ethylene dichloride (1,2-Dichloroethane)	value update	non_cancer	400	7	CAL EPA	MDH
Jul-2020	107-21-1	Ethylene glycol	new value	acute		2000		ATSDR
Jul-2020	75-21-8	Ethylene oxide	new value	subchronic		160		ATSDR
Jul-2020	50-00-0	Formaldehyde	value update	acute	94	50	HRV	MDH
Jul-2020	50-00-0	Formaldehyde	Dropped cancer value: MDH RAA	cancer	2		MDH	
Jul-2020	50-00-0	Formaldehyde	new value	subchronic		9		MDH
Jul-2020	111-30-8	Glutaraldehyde	new value	acute		4.1		ATSDR
Jul-2020	111-30-8	Glutaraldehyde	new value	subchronic		0.12		ATSDR
Jul-2020	77-47-4	Hexachlorocyclopentadiene	new value	subchronic		110		ATSDR
Jul-2020	67-72-1	Hexachloroethane	new value	acute		58000		ATSDR
Jul-2020	67-72-1	Hexachloroethane	value update	cancer	2.5	1	IRIS	CALEPA
Jul-2020	67-72-1	Hexachloroethane	new value	subchronic		58000		ATSDR
Jul-2020	822-06-0	Hexamethylene-1,6-diisocyanate	new value	acute		0.3		CALEPA
Jul-2020	822-06-0	Hexamethylene-1,6-diisocyanate	new value	subchronic		0.21		ATSDR
Jul-2020	110-54-3	Hexane	Dropped value: Only PPRTV screening valu	cancer	50		PPRTV	
Jul-2020	110-54-3	Hexane	value update	non_cancer	2000	700	HRV	MDH
Jul-2020	74-90-8	Hydrogen cyanide	value update	non_cancer	3	0.8	HRV	MDH
Jul-2020	67-63-0	Isopropyl alcohol	value update	non_cancer	7000	200	CAL EPA	MDH
Jul-2020	7758-97-6	Lead Chromate	value update	cancer	0.0008	0.000067	HRV	CAL EPA
Jul-2020	7758-97-6	Lead Chromate	value update	non_cancer	0.008	0.2	IRIS	CAL EPA
Jul-2020	110-49-6	Methyl Cellosolve Acetate	value update	subchronic	10	60	PPRTV	PPRTV
Jul-2020	74-87-3	Methyl chloride (Chloromethane)	new value	acute		1000		ATSDR
Jul-2020	71-55-6	Methyl chloroform (1,1,1-Trichloroethane)	value update	acute	140000	68000	HRV	MDH
Jul-2020	60-34-4	Methyl Hydrazine	Dropped value: Only PPRTV screening valu	subchronic	0.3		PPRTV	
Jul-2020	1634-04-4	Methyl tert butyl ether	new value	acute		7200		ATSDR
Jul-2020	1634-04-4	Methyl tert butyl ether	new value	subchronic		2500		ATSDR
Jul-2020	75-09-2	Methylene chloride (Dichloromethane)	value update	cancer	20	1000	HRV	MDH
Jul-2020	91-20-3	Naphthalene	Dropped cancer value: MDH RAA	cancer	9		MDH	MDH RAA
Jul-2020	7440-02-0	Nickel	value update	acute	11	0.2	HRV	MDH HRV (CALEPA)
Jul-2020	1313-99-1	Nickel oxide	value update	acute	11	0.2	HRV	MDH HRV (CALEPA)
Jul-2020	0-02-5	Nickel refinery dust from the pyrometallurgical process	value update	acute	11	0.2	HRV	MDH HRV (CALEPA)
Jul-2020	12035-72-2	Nickel sulfide (NI3S2)	value update	acute	11	0.2	HRV	MDH HRV (CALEPA)
Jul-2020	7697-37-2	Nitric acid	value update	acute	130	86	HRV	MDH HRV (CALEPA)
Jul-2020	79-46-9	Nitropropane, 2-	new value	subchronic		70		PPRTV
Jul-2020	1336-36-3	Polychlorinated biphenyls (Aroclors unspeciated)	value update	cancer	0.1	0.0000026	IRIS	CAL EPA
Jul-2020	9016-87-9	Polymeric diphenylmethane diisocyanate	new value	acute		12		CALEPA
Jul-2020	78-87-5	Propylene dichloride (1,2-Dichloropropane)	new value	acute		230		ATSDR
Jul-2020	78-87-5	Propylene dichloride (1,2-Dichloropropane)	new value	cancer		2.7		PPRTV
Jul-2020	2151068	Strontium chromate	value update	cancer	0.0008	0.000067	HRV	CAL EPA
Jul-2020	2151068	Strontium chromate	value update	non_cancer	0.008	0.2	IRIS	CAL EPA
Jul-2020	100-42-5	Styrene	value update	non_cancer	1000	900	HRV	MDH HRV (CALEPA)
Jul-2020	127-18-4	Tetrachloroethylene (Perchloroethylene)	new value	subchronic		41		ATSDR
Jul-2020	108-88-3	Toluene	value update	non_cancer	400	4000	HRV	MDH ISV
Jul-2020	584-84-9	Toluene-2,4-diisocyanate	new value	acute		2		CAL EPA
Jul-2020	584-84-9	Toluene-2,4-diisocyanate	new value	cancer		0.91		CAL EPA
Jul-2020	584-84-9	Toluene-2,4-diisocyanate	new value	non_cancer		0.008		CAL EPA
Jul-2020	91-08-7	Toluene-2,6-diisocyanate	value update	non_cancer	0.07	0.008	CAL EPA	CAL EPA
Jul-2020	26471-62-5	Toluenediisocyanate (mixed isomers)	value update	non_cancer	0.08	0.008	HRV	CAL EPA
Jul-2020	79-00-5	Trichloroethane, 1,1,2-	new value	non_cancer		0.2		MDH ISV
Jul-2020	79-01-6	Trichloroethylene (TCE)	new value	acute		2		MDH HBV *Short-term (24hr)
Jul-2020	79-01-6	Trichloroethylene (TCE)	new value	cancer		2		MDH HBV
Jul-2020	79-01-6	Trichloroethylene (TCE)	new value	non_cancer		2		MDH HBV
Jul-2020	79-01-6	Trichloroethylene (TCE)	new value	subchronic		2		MDH HBV
Jul-2020	75-69-4	Trichlorofluoromethane (CFC-11)	new value	non_cancer		1000		MDH ISV
Jul-2020	76-13-1	Trichlorotrifluoroethane, 1,1,2- (CFC-13)	new value	non_cancer		5000		PPRTV
Jul-2020	76-13-1	Trichlorotrifluoroethane, 1,1,2- (CFC-13)	new value	subchronic		50000		PPRTV
Jul-2020	526-73-8	Trimethylbenzene, 1,2,3-	value update	subchronic	50	200	PPRTV	IRIS

RASS version: 2020-12

Values in units of ug/m^3, unless otherwise noted

Date	CAS	Chemical Name / RASS Update	Change	Tox Endpoint	Previous value	New value	Previous Ref. Source	New Ref. Source
Jul-2020	95-63-6	Trimethylbenzene, 1,2,4-	value update	subchronic	70	200	PPRTV	IRIS
Jul-2020	108-05-4	Vinyl acetate	new value	subchronic		35		ATSDR
Jul-2020	75-01-4	Vinyl chloride	new value	subchronic		77		ATSDR
Jul-2020	1330-20-7	Xylenes	value update	acute	43000	22000	HRV	MDH HRV (CALEPA)
Jul-2020	108-38-3	Xylenes, m-	value update	acute	43000	22000	HRV	MDH HRV (CALEPA)
Jul-2020	95-47-6	Xylenes, o-	value update	acute	43000	22000	HRV	MDH HRV (CALEPA)
Jul-2020	106-42-3	Xylenes, p-	value update	acute	43000	22000	HRV	MDH HRV (CALEPA)
Jul-2020	1313-13-9	Manganese Dioxide	Dropped pollutant: Incorporated into Manganese Compounds					
Jul-2020	75-85-4	Amyl Alcohol, tert-	Dropped pollutant: Only PPRTV screening value available					
Jul-2020	92-52-4	Biphenyl, 1,1-	Dropped pollutant: Only PPRTV screening value available					
Jul-2020	10061-01-5	cis-1,3-Dichloropropene	New pollutant					
Jul-2020	10061-02-6	trans-1,3-Dichloropropene	New pollutant					
Jul-2020	101-80-4	Diaminodiphenyl ether, 4,4-	New pollutant					
Jul-2020	10294-40-3	Barium Chromate	New pollutant					
Jul-2020	104-76-7	Hexanol, 1-,2-ethyl- (2-Ethyl-1-hexanol)	New pollutant					
Jul-2020	10588-01-9	Sodium Dichromate	New pollutant					
Jul-2020	107-30-2	Chloromethyl Methyl Ether	New pollutant					
Jul-2020	108-67-8	Trimethylbenzene, 1,3,5-	New pollutant					
Jul-2020	115-28-6	Chlorendic acid	New pollutant					
Jul-2020	1332-21-4	Asbestos (units in fibers)	New pollutant					
Jul-2020	1332-21-4-LAA	Asbestos, Libby Amphibole (units in fibers)	New pollutant					
Jul-2020	13510-49-1	Beryllium sulfate	New pollutant					
Jul-2020	13765-19-0	Calcium Chromate	New pollutant					
Jul-2020	139-13-9	Nitrilotriacetic acid	New pollutant					
Jul-2020	16065-83-1	Chromium(III) Compounds	New pollutant					
Jul-2020	18662-53-8	Nitrilotriacetic acid, trisodium salt monohydrate	New pollutant					
Jul-2020	25013-16-5	Butylated hydroxyanisole	New pollutant					
Jul-2020	3068-88-0	Butyrolactone, beta-	New pollutant					
Jul-2020	3688-53-7	Acrylamide, 2-(2-furyl)-3-(5-nitro-2-furyl)-	New pollutant					
Jul-2020	53-96-3	Acetylaminofluorene, 2-	New pollutant					
Jul-2020	540-88-5	Tert-Butyl Acetate	New pollutant					
Jul-2020	563-47-3	Chloro-2-methylpropene, 3-	New pollutant					
Jul-2020	57-57-8	Propiolactone, beta-	New pollutant					
Jul-2020	59536-65-1	Polybrominated Biphenyls	New pollutant					
Jul-2020	6109-97-3	Amino-9-ethylcarbazolehydrochloride, 3-	New pollutant					
Jul-2020	62-56-6	Thiourea	New pollutant					
Jul-2020	65-85-0	Benzoic Acid	New pollutant					
Jul-2020	67-64-1	Acetone	New pollutant					
Jul-2020	712-68-5	Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazol, 2-	New pollutant					
Jul-2020	7440-42-8	Boron And Borates Only	New pollutant					
Jul-2020	7440-61-1	Uranium, Insoluble Compounds	New pollutant					
Jul-2020	7440-62-2	Vanadium and Compounds	New pollutant					
Jul-2020	75-27-4	Bromodichloromethane	New pollutant					
Jul-2020	2095581	Boron Trifluoride	New pollutant					
Jul-2020	78-88-6	Dichloropropene, 2,3-	New pollutant					
Jul-2020	87-29-6	Cinnamyl anthranilate	New pollutant					
Jul-2020	95-53-4	Toluidine, o- (Methylaniline, 2-)	New pollutant					
Jul-2020	96-09-3	Styrene oxide	New pollutant					
Jul-2020	URANIUM-SOLUBL	Uranium (Soluble Salts)	New pollutant					
Feb-2019	Multiple	Carcinogenic PAHs-relative potency factors stayed the same		Chronic Cancer	0.0011	6.00E-04	Cal EPA	EPA IRIS
Feb-2019	156-60-5	Dichloroethylene, 1,2-trans-	Dropped pollutant	Chronic Noncancer	60		PPRTV	MDH advice
Feb-2019	100-00-5	Chloronitrobenzene, p-		Chronic Noncancer	6	2	PPRTV	PPRTV
Feb-2019	142-82-5	Heptane, N		Chronic Noncancer		400		PPRTV
Feb-2019	142-82-5	Heptane, N		Subchronic Noncancer		4000		PPRTV
Feb-2019	76-13-1	Trichloro-1,2,2-trifluoroethane, 1,1,2-		Chronic Noncancer		5000		PPRTV
Feb-2019	76-13-1	Trichloro-1,2,2-trifluoroethane, 1,1,2-		Subchronic Noncancer		50000		PPRTV
Feb-2019	420-46-2	Trifluoroethane, 1,1,1-		Chronic Noncancer		20000		PPRTV
Feb-2019	420-46-2	Trifluoroethane, 1,1,1-		Subchronic Noncancer		200000		PPRTV
Feb-2019	463-58-1	Carbonyl sulfide		Acute Noncancer		660		Cal EPA
Feb-2019	101-68-8	Methylene diphenyl diisocyanate (MDI)		Acute Noncancer		12		CAL EPA
Feb-2019	584-84-9	Toluene diisocyanate, 2,4-		Acute Noncancer		2		CAL EPA
Feb-2019	91-08-7	Toluene-2,6-diisocyanate		Acute Noncancer		2		CAL EPA
Feb-2019	00-07-7	Petroleum Hydrocarbons, Aliphatic (C7 - C11)		Chronic Cancer	5000	Removed - On	HBV	
Feb-2019	60-34-4	Methyl Hydrazine		Chronic Cancer	0.1	Removed - PP	PPRTV	
Jun-2018	79-01-6	Trichloroethylene		Acute Reproductive	6	2	RAA	MDH RAA
Mar-18	79-01-6	Trichloroethylene		Acute Reproductive	2000	6	HRV/MDH	MDH RAA
Mar-18	205-12-9	Benzo[c]fluorine				MPSF resident cancer value switched with urban gardener.		
Mar-18	7440-41-7	Beryllium				MPSF resident cancer value switched with urban gardener.		
Mar-18	0-00-3	Beryllium Compounds				MPSF resident cancer value switched with urban gardener.		
Mar-18	00-09-1	TCDD Eqivalents, 2,3,7,8-				MPSF resident cancer value switched with urban gardener.		
Mar-18	00-08-8	Tetrachlorodibenzodioxins, All Isomers				MPSF resident cancer value switched with urban gardener.		
Mar-18	51207-31-9	Tetrachlorodibenzofuran, 2,3,7,8-				MPSF resident cancer value switched with urban gardener.		
Mar-18	00-08-6	Tetrachlorodibenzofurans, All Isomers				MPSF resident cancer value switched with urban gardener.		
Mar-18	1746-01-6	Tetrachlorodibenzo-p-dioxin, 2,3,7,8-				MPSF resident cancer value switched with urban gardener.		
Jan-18	7784-42-1	Arsine		Chronic Cancer	0.002		HRV/MDH	
Jan-18	74-83-9	BromoMethane		Chronic NonCancer		5		MDH/HRV
Feb-17	526-73-8	Trimethylbenzene, 1,2,3-		Chronic NonCancer	5.00E+00	6.00E+01	PPRTV	EPA
Feb-17	95-63-6	Trimethylbenzene, 1,2,4-		Chronic NonCancer	7.00E+00	6.00E+01	PPRTV	EPA
Feb-17	75-21-8	Ethylene oxide		Chronic Cancer	0.000088	3.0E-03	CAL EPA	EPA

RASS version: 2020-12
Values in units of ug/m^3, unless otherwise noted

Date	CAS	Chemical Name / RASS Update	Change	Tox Endpoint	Previous value	New value	Previous Ref. Source	New Ref. Source
Feb-17	91-20-3	Naphthalene		Chronic Cancer	3.40E-05	1.11E-06	Cal EPA	MDH
Feb-17	127-18-4	Tetrachloroethylene (Perchloroethylene)		Chronic NonCancer	100	15	MDH	MDH
Feb-17	Multiple	All MDH risk values rounded to 1 significant figure.		Chronic Cancer	*	*	MDH/MPCA	MDH/MPCA
Jan-16	79-01-6	Trichloroethylene		Chronic Cancer	3	2	MDH-HRV	MDH-RAA
Jan-16	75-86-5	Acetone Cyanohydrin		Chronic NonCancer		2		PPRTV
Jan-16	92-52-4	1,1-biphenyl		Chronic NonCancer		low confidence, screening value in ap		PPRTV
Jan-16	107-18-6	Allyl Alcohol		Chronic NonCancer		low confidence, screening value in ap		PPRTV
Jan-16	74-97-5	bromochloromethane		Chronic NonCancer		low confidence, screening value in ap		PPRTV
Jan-16	463-58-1	Carbonyl sulfide		Chronic NonCancer		100		PPRTV
Jan-16	88-73-3	Chloronitrobenzene, o-		Subchronic NonCancer		0.1		
Jan-16	110-83-8	Cyclohexene		Chronic NonCancer		low confidence, screening value in ap		PPRTV
Jan-16	74-95-3	Methylene Bromide		Subchronic NonCancer		low confidence, screening value in ap		PPRTV
Jan-16	77-73-6	Dicyclopentadiene		Subchronic NonCancer		low confidence, screening value in ap		PPRTV
Jan-16	77-73-6	Dicyclopentadiene		Chronic NonCancer		low confidence, screening value in ap		PPRTV
Jan-16	57-14-7	Dimethylhydrazine, 1,1-		Chronic NonCancer		low confidence, screening value in ap		PPRTV
Jan-16	141-78-6	Ethyl acetate		Chronic NonCancer		70		PPRTV
Jan-16	141-78-6	Ethyl acetate		Subchronic NonCancer		700		PPRTV
Jan-16	140-88-5	Ethyl acrylate		Chronic NonCancer		8		PPRTV
Jan-16	64-18-6	Formic Acid		Chronic NonCancer		low confidence, screening value in ap		PPRTV
Jan-16	60-34-4	Methyl hydrazine		Chronic NonCancer		low confidence, screening value in ap		PPRTV
Jan-16	60-34-4	Methyl hydrazine		Chronic Cancer		low confidence, screening value in ap		PPRTV
Jan-16	100-01-6	Nitroaniline, 4-		Chronic NonCancer		6		PPRTV
Jan-16	88-74-4	Nitroaniline, 2-		Subchronic NonCancer		0.4		PPRTV
Jan-16	463-58-1	Carbonyl sulfide		Subchronic NonCancer		1000		PPRTV
Jan-16	107-02-8	Acrolein	Removed respiratory endpoint from acute ar	Acute Noncancer				
Dec-14	202-94-8	11H-Benz[b,c]aceanthrylene		Chronic Cancer		0.00009		MDH
Dec-14	202-98-2	4H-Cyclopenta[d,e,f]chrysene		Chronic Cancer		0.00054		MDH
Dec-14	75-86-5	Acetone Cyanohydrin	Removed appendix screening PPRTV value	Chronic Noncancer			PPRTV	
Dec-14	111-69-3	adinoponitrile		Subchronic NonCancer		60		PPRTV
Dec-14	75-85-4	Amyl Alcohol, terti-	Removed appendix screening PPRTV value	Chronic Noncancer			PPRTV	
Dec-14	191-26-4	Anthanthrene		Chronic Cancer		0.00072		MDH
Dec-14	123-77-3	Azodicarbonamide		Chronic NonCancer		7.00E-03		PPRTV
Dec-14	199-54-2	Benz[e]aceanthrylene		Chronic Cancer		0.0014		MDH
Dec-14	202-33-5	Benz[j]aceanthrylene		Chronic Cancer		0.11		MDH
Dec-14	211-91-6	Benz[l]aceanthrylene		Chronic Cancer		0.009		MDH
Dec-14	205-82-3	Benzo(j)fluoranthene		Chronic Cancer	CAL EPA	5.40E-04	0.00011	MDH
Dec-14	207-8-9	Benzo(k)fluoranthene		Chronic Cancer	CAL EPA	5.40E-05	0.00011	MDH
Dec-14	56-55-3	Benzo(a)anthracene		Chronic Cancer	CAL EPA	3.60E-04	0.00011	MDH
Dec-14	50-32-8	Benzo(a)pyrene		Chronic Cancer	CAL EPA	1.80E-03	0.0011	MDH
Dec-14	205-99-2	Benzo(b)fluoranthene		Chronic Cancer	CAL EPA	1.40E-03	0.00011	MDH
Dec-14	205-12-9	Benzo[c]fluorene		Chronic Cancer		0.036		MDH
Dec-14	191-24-2	Benzo[g,h,i]perylene		Chronic Cancer		0.000016		MDH
Dec-14	95-52-4	Biphenyl 1,1	(removed PPRTV appendix value)	Chronic NonCancer				
Dec-14	74-97-5	bromochloromethane		Subchronic Noncancer		100		PPRTV
Dec-14	78-92-2	Butyl alcohol, sec-		Subchronic Noncancer		30000		PPRTV
Dec-14	108-90-7	Chlorobenzene		Subchronic Noncancer		500		PPRTV
Dec-14	98-56-6	Chlorobenzotrifluoride, 4-		Subchronic Noncancer		3000		PPRTV
Dec-14	100-00-5	Chloronitrobenzene, p-		Subchronic Noncancer		6		PPRTV
Dec-14	218-01-9	Chrysene		Chronic Cancer	CAL EPA	1.80E-04	1.10E-05	MDH
Dec-14	7440-48-4	Cobalt		Subchronic Noncancer		2.00E-02		PPRTV
Dec-14	110-82-7	Cyclohexane		Subchronic Noncancer		18000		PPRTV
Dec-14	109-94-1	Cyclohexanone		Subchronic Noncancer		7000		PPRTV
Dec-14	27208-37-3	Cyclopenta[c,d]pyrene		Chronic Cancer		0.00072		MDH
Dec-14	5385-75-1	Dibenzo[a,e]fluoranthene		Chronic Cancer		0.0016		MDH
Dec-14	226-36-8	Dibenz(a,h)acridine		Chronic Cancer	CAL EPA	1.80E-04	1.10E-04	MDH
Dec-14	224-42-0	Dibenz(a,j)acridine		Chronic Cancer	CAL EPA	1.80E-04	1.10E-04	MDH
Dec-14	53-70-3	Dibenz(a,h)anthracene		Chronic Cancer	CAL EPA	1.80E-02	1.20E-03	MDH
Dec-14	75-71-8	Dichlorodifluoromethane (CFC-12)		Subchronic Noncancer		1000		PPRTV
Dec-14	192-65-4	Dibenzo(a,e)pyrene		Chronic Cancer	CAL EPA	7.20E-04	1.10E-03	MDH
Dec-14	189-64-0	Dibenzo(a,h)pyrene		Chronic Cancer	CAL EPA	1.60E-03	1.10E-02	MDH
Dec-14	191-30-0	Dibenzo(a,l)pyrene		Chronic Cancer	CAL EPA	5.40E-02	1.10E-02	MDH
Dec-14	194-59-2	Dibenzo(c,g)carbazole, 7H-		Chronic Cancer	CAL EPA	1.80E-03	1.10E-03	MDH
Dec-14	189-55-9	Dibenzo[a,i]pyrene		Chronic Cancer	CAL EPA	1.10E-03	1.10E-02	MDH
Dec-14	764-41-0	Dichloro-2-butene, 1,4-				4.20E-03		PPRTV
Dec-14	75-71-8	Dichlorodifluoromethane (CFC-12)		Subchronic Noncancer		1.00E+03		PPRTV
Dec-14	111-42-2	Diethanolamine		Subchronic Noncancer		2		PPRTV

RASS version: 2020-12

Values in units of ug/m^3, unless otherwise noted

Date	CAS	Chemical Name / RASS Update	Change	Tox Endpoint	Previous value	New value	Previous Ref. Source	New Ref. Source
Dec-14	112-34-5	Diethylene Glycol Monobutyl Ether		Subchronic Noncancer		1		PPRTV
Dec-14	111-90-0	Diethylene Glycol Monoethyl Ether		Subchronic Noncancer		3		PPRTV
Dec-14	108-20-3	Diisopropyl Ether		Subchronic Noncancer		700		PPRTV
Dec-14	68-12-2	Dimethyl formamide		Subchronic Noncancer		70		PPRTV
Dec-14	57-97-6	Dimethylbenz[a]anthracene, 7,12-	Removed value per MDH advice	Chronic Cancer	1.40E-04		Cal EPA	
Dec-14	57-14-7	Dimethylhydrazine, 1,1-		Subchronic Noncancer		8.00E-03		PPRTV
Dec-14	42397-64-8	Dinitropyrene, 1,6- (BaP)		Chronic Cancer		1.80E-02		MDH
Dec-14	42397-65-9	Dinitropyrene, 1,8- (BaP)		Chronic Cancer		1.80E-03		MDH
Dec-14	106-89-8	Epichlorohydrin (l-Chloro-2,3-epoxypropane)		Subchronic Noncancer		10		PPRTV
Dec-14	140-88-5	Ethyl Acrylate		Subchronic Noncancer		8		PPRTV
Dec-14	100-41-4	Ethyl benzene		Subchronic Noncancer		9.00E+03		PPRTV
Dec-14	75-00-3	Ethyl chloride (Chloroethane)		Subchronic Noncancer		4000		PPRTV
Dec-14	97-63-2	Ethyl Methacrylate		Subchronic Noncancer		3.00E+03		PPRTV
Dec-14	107-06-2	Ethylene dichloride (1,2-Dichloroethane)		Subchronic Noncancer		70		PPRTV
Dec-14	206-44-0	Fluoranthene		Chronic Cancer		1.40E-04		MDH
Dec-14	64-18-6	Formic Acid		Subchronic Noncancer		0.9		PPRTV
Dec-14	64-18-6	Formic Acid	Removed appendix screening PPRTV value	Chronic Noncancer				
Dec-14	110-54-3	Hexane		Subchronic Noncancer		2.00E+03		PPRTV
Dec-14	VARIOUS	Hexane, Commercial (in hexane row)		Chronic Cancer		2.00E-07		PPRTV
Dec-14	302-01-2	Hydrazine		Subchronic Noncancer		9.00E-02		PPRTV
Dec-14	193-39-5	Indeno(1,2,3-cd)pyrene		Chronic Cancer		1.30E-04		MDH
Dec-14	67-63-0	Isopropyl alcohol		Subchronic Noncancer		7.00E+03		PPRTV
Dec-14	126-98-7	Methacrylonitrile		Subchronic Noncancer		300		PPRTV
Dec-14	126-98-7	Methacrylonitrile		Chronic Noncancer		30		PPRTV
Dec-14	96-33-3	Methyl acrylate		Subchronic Noncancer		20		PPRTV
Dec-14	74-83-9	Methyl bromide (Bromomethane)		Subchronic Noncancer		100		PPRTV
Dec-14	110-49-6	Methyl Cellosolve Acetate		Subchronic Noncancer		10		PPRTV
Dec-14	74-87-3	Methyl chloride (Chloromethane)		Subchronic Noncancer		3000		PPRTV
Dec-14	56-49-5	Methylcholanthrene, 3-		Chronic Cancer	6.30E-03	1.00E-02	Cal EPA	MDH
Dec-14	3697-24-3	Methylchrysene, 5-		Chronic Cancer	1.10E-03	1.80E-03	Cal EPA	MDH
Dec-14	60-34-4	Methyl Hydrazine		Chronic Cancer		1.00E-03		PPRTV
Dec-14	60-34-4	Methyl Hydrazine		Subchronic Noncancer		0.3		PPRTV
Dec-14	110-49-6	Methylacrylonitrile				30		PPRTV
Dec-14	74-95-3	Methylene Bromide		Subchronic Noncancer		40		PPRTV
Dec-14	VARIOUS	Mid Range Aliphatic Hydrocarbons		Chronic Cancer		4.00E-06		PPRTV
Dec-14	64724-95-6	Naphtha, High Flash Aromatic (HFAN)		Subchronic Noncancer		1000		PPRTV
Dec-14	193-09-9	Naphtho[2,3-e]pyrene		Chronic Cancer		0.00054		MDH
Dec-14	602-87-9	Nitroacenaphthene, 5-		Chronic Cancer	3.70E-05	3.60E-05	Cal EPA	MDH
Dec-14	100-01-6	Nitroaniline, 4-		Subchronic Noncancer		20		PPRTV
Dec-14	100-01-6	Nitroaniline, 4-	Removed: appendix screening PPRTV valu	Chronic Noncancer				
Dec-14		Nitrochrysene, 6-		Chronic Cancer	1.10E-02	1.80E-02	Cal EPA	MDH
Dec-14	607-57-8	Nitrofluorene, 2-		Chronic Cancer	1.10E-05	1.80E-05	Cal EPA	MDH
Dec-14	75-52-5	Nitromethane		Subchronic Noncancer		4		PPRTV
Dec-14	5522-43-0	Nitropyrene, 1-		Chronic Cancer	1.10E-04	1.80E-04	Cal EPA	MDH
Dec-14	57835-92-4	Nitropyrene, 4-		Chronic Cancer	1.10E-04	1.80E-04	Cal EPA	MDH
Dec-14	111-84-2	N-Nonane		Subchronic Noncancer		200		PPRTV
Dec-14	111-84-2	Nonane, n-		Chronic Non cancer	200	20	PPRTV	PPRTV
Dec-14	109-66-0	Pentane, n-		Subchronic Noncancer		10000		PPRTV
Dec-14	00-07-7	Petroleum Hydrocarbons Aliphatic (C7-C11)				4.00E-06		PPRTV
Dec-14	126-33-0	Sulfolane		Subchronic Noncancer		20		PPRTV
Dec-14	127-17-4	Tetrachloroethylene		Chronic Cancer	20	2	MDH	MDH
Dec-14	120-82-1	Trichlorobenzene, 1,2,4-		Subchronic Noncancer		20		PPRTV
Dec-14	79-00-5	Trichloroethane, 1,1,2-		Subchronic Noncancer		2		PPRTV
Dec-14	75-69-4	Trichlorofluoromethane (CFC-11)		Subchronic Noncancer		1000		PPRTV
Dec-14	96-19-5	Trichloropropene, 1,2,3-		Subchronic Noncancer		3		PPRTV
Dec-14	526-73-8	Trimethylbenzene, 1,2,3-		Subchronic Noncancer		50		PPRTV
Dec-14	95-63-6	Trimethylbenzene, 1,2,4-		Subchronic Noncancer		70		PPRTV
Dec-14	1314-62-1	Vanadium Pentoxide, (V2O5)		Subchronic Noncancer		0.1		PPRTV
Dec-14	1330-20-7	Xylenes		Subchronic Noncancer		400		PPRTV
Dec-14	108-38-3	Xylenes, m-		Subchronic Noncancer		400		PPRTV
Dec-14	95-47-6	Xylenes, o-		Subchronic Noncancer		400		PPRTV
Dec-14	106-42-3	Xylenes, p-		Subchronic Noncancer		400		PPRTV
10/28/2013	106-99-0	Butadiene		Acute Noncancer		660		CAL EPA
10/28/2013		PCB 81		Chronic Cancer	1.10E-02	3.80E-03	CAL EPA	CAL EPA
10/28/2013		PCB 105		Chronic Cancer	1.10E-03	3.80E-03	CAL EPA	CAL EPA
10/28/2013		PCB 114		Chronic Cancer	1.10E-03	1.90E-02	CAL EPA	CAL EPA

RASS version: 2020-12

Values in units of ug/m^3, unless otherwise noted

Date	CAS	Chemical Name / RASS Update	Change	Tox Endpoint	Previous value	New value	Previous Ref. Source	New Ref. Source
10/28/2013		PCB 118		Chronic Cancer	1.10E-03	3.80E-03	CAL EPA	CAL EPA
10/28/2013		PCB 123		Chronic Cancer	1.10E-03	3.80E-03	CAL EPA	CAL EPA
10/28/2013		PCB 156		Chronic Cancer	1.10E-03	1.90E-02	CAL EPA	CAL EPA
10/28/2013		PCB 157		Chronic Cancer	1.10E-03	1.90E-02	CAL EPA	CAL EPA
10/28/2013		PCB 167		Chronic Cancer	1.10E-03	3.80E-04	CAL EPA	CAL EPA
10/28/2013		PCB 169		Chronic Cancer	1.10E+00	3.80E-01	CAL EPA	CAL EPA
10/28/2013		PCB 189		Chronic Cancer	1.10E-03	3.80E-03	CAL EPA	CAL EPA
10/28/2013	10102-44-0	Nitrogen dioxide		Acute Non cancer	470	470	CAL EPA	HBV
10/28/2013		Silica		Chronic Non cancer	3	3	CAL EPA	HBV
10/28/2013	123-91-1	1,4 Dioxane		Chronic Non cancer	3000	30	CAL EPA	IRIS
10/28/2013	67-56-1	Methanol		Chronic Non cancer	4000	20000	CAL EPA	IRIS
10/28/2013	630-08-0	Carbon monoxide (Added new chemical)		Acute Non cancer		23000		CAL EPA
10/28/2013	105-60-2	Caprolactum (Added new chemical)		Acute Non cancer		50		CAL EPA
10/28/2013	75-85-4	Amyl alcohol,tert-(Added new chemical)		Chronic Non cancer		3		PPRTV
10/28/2013	764-41-0	Dichloro-2-butene,1,4-(Removed chemical)		Chronic Cancer	4.20E-03		PPRTV	
10/28/2013	110-57-6	Dichloro-2-butene,trans-1,4-(Removed chemical)		Chronic Cancer	4.20E-03		PPRTV	
10/28/2013	000075-52-5	Nitromethane		Subchronic Non cancer	20	None	PPRTV	PPRTV
10/28/2013	542-92-7	Cyclopentadiene (Removed chemical, no tox values)						
12/14/2012	107-02-8	Acrolein			2	5	HBV	HBV
12/14/2012	107-02-8	Acrolein			0.2	1	HRV	HBV
12/14/2012	107-02-8	Acrolein			0.02	0.4	IRIS	HBV
12/14/2012	7440-02-0	Nickel and compounds including 1146 Nickel refinery dust 12035-72-2 Nickel subsulfide			0.05	0.014	CAL EPA	CAL EPA
12/14/2012	1313-99-1	nickel oxide,			0.1	0.02	CAL EPA	CAL EPA
12/14/2012	75-86-5	Acetone Cyanohydrin			60	2	PPRTV	PPRTV
12/14/2012	75-86-5	Acetone Cyanohydrin				20		PPRTV
12/14/2012	109-99-9	tetrahydrofuran				2000		IRIS
12/14/2012	1101	Fluorides (except hydrogen fluoride)				13		IRIS
12/14/2012	10294-34-5	Boron Trichloride				20		PPRTV
12/14/2012	10294-34-5	Boron Trichloride				20		PPRTV
12/14/2012	96-33-3	Methyl acrylate				20		PPRTV
12/14/2012	96-33-3	Methyl acrylate				20		PPRTV
12/14/2012	126-33-0	Sulfolane				20		PPRTV
12/14/2012	7446-09-5	Sulfur dioxide				660		CAL EPA
12/14/2012	7439-92-1	Lead and 0-01-3 Lead compounds				0.15		EPA NAAQS Quarterly standard
12/14/2012		PM2.5			15	12	EPA NAAQS	EPA NAAQS
1/9/2012	75-86-5	Acetone Cyanohydrin				60		PPRTV
1/9/2012	111-69-3	Adiponitrile				6		PPRTV
1/9/2012		VARIOUS Aliphatic Hydrocarbon Streams (Midrange)				100		PPRTV
1/9/2012	7429-90-5	Aluminum				5		PPRTV
1/9/2012	100-44-7	Benzyl chloride				1		PPRTV
1/9/2012	78-92-2	Butyl alcohol, sec-				30000		PPRTV
1/9/2012	98-56-6	Chlorobenzotrifluoride, 4-				300		PPRTV
1/9/2012	100-00-5	Chloronitrobenzene, p-				0.6		PPRTV
1/9/2012	7440-48-4	Cobalt				0.006		PPRTV
1/9/2012	7440-48-4	Cobalt				0.001		PPRTV
1/9/2012	110-57-6	Dichloro-2-butene, trans-1,4-				0.002		PPRTV
1/9/2012	156-60-5	Dichloroethylene, trans-1,2-				0.06		PPRTV
1/9/2012	111-90-0	Diethylene Glycol Monoethyl Ether				3		PPRTV
1/9/2012	108-20-3	Diisopropyl Ether				400		PPRTV
1/9/2012	57-14-7	Dimethylhydrazine, 1,1-				0.002		PPRTV
1/9/2012	111-15-9	Ethoxyethanol Acetate				60		PPRTV
1/9/2012	97-63-2	Ethyl Methacrylate				300		PPRTV
1/9/2012	64-18-6	Formic Acid				3		PPRTV
1/9/2012	67-72-1	Hexachloroethane				30		IRIS
1/9/2012	110-49-6	Methoxyethanol Acetate, 2-				0.001		PPRTV
1/9/2012	64724-95-6	Naphtha, High Flash Aromatic (HFAN)				100		PPRTV
1/9/2012	100-01-6	Nitroaniline, 4-				6		PPRTV
1/9/2012	75-52-5	Nitromethane				20		PPRTV
1/9/2012	75-52-5	Nitromethane				1		PPRTV
1/9/2012	111-84-2	N-Nonane				200		PPRTV
1/9/2012	109-66-0	Pentane, n-				1000		PPRTV
1/9/2012	96-19-5	Trichloropropene, 1,2,3-				0.3		PPRTV
1/9/2012	526-73-8	Trimethylbenzene, 1,2,3-				5		PPRTV
1/9/2012	95-63-6	Trimethylbenzene, 1,2,4-				7		PPRTV
1/9/2012	1314-62-1	Vanadium oxide, (V2O5)				0.007		PPRTV
1/9/2012	1314-62-1	Vanadium oxide, (V2O5)				0.0012		PPRTV

RASS version: 2020-12

Values in units of ug/m^3, unless otherwise noted

Date	CAS	Chemical Name / RASS Update	Change	Tox Endpoint	Previous value	New value	Previous Ref. Source	New Ref. Source
1/9/2012	75-05-8	Acetonitrile			500		HEAST	
1/9/2012	7664-41-7	Ammonia			100		HEAST	
1/9/2012	62-53-3	Aniline			10		HEAST	
1/9/2012	7440-36-0	Antimony			0.2		HEAST	
1/9/2012	0-00-1	Antimony Compounds			0.2		HEAST	
1/9/2012	1309-64-4	Antimony trioxide			0.2		HEAST	
1/9/2012	7440-39-3	Barium			5		HEAST	
1/9/2012	00-03-0	Barium Compounds			5		HEAST	
1/9/2012	88-74-4	Benzenamine, 2-Nitro-			2		HEAST	
1/9/2012	25013-15-4	Benzene, Ethenylmethyl-			40		HEAST	
1/9/2012	108-60-1	Bis(2-chloro-1-methylethyl)ether			1		HEAST	
1/9/2012	7440-42-8	Boron			20		HEAST	
1/9/2012	7440-42-8	Boron			20		HEAST	
1/9/2012	7637-07-2	Boron trifluoride			7		HEAST	
1/9/2012	7637-07-2	Boron trifluoride			0.7		HEAST	
1/9/2012	75-15-0	Carbon disulfide			700		HEAST	
1/9/2012	510-15-6	Chlorobenzilate			1.3E-01		HEAST	
1/9/2012	126-99-8	Chloroprene			70		HEAST	
1/9/2012	75-29-6	Chloropropane, 2-			1000		HEAST	
1/9/2012	75-29-6	Chloropropane, 2-			100		HEAST	
1/9/2012	542-92-7	Cyclopentadiene			3000		HEAST	
1/9/2012	95-50-1	Dichlorobenzene, 1,2-			2000		HEAST	
1/9/2012	95-50-1	Dichlorobenzene, 1,2-			200		HEAST	
1/9/2012	64-41-0 / 1476-11-1	Dichloro-2-butene, 1,4-			0.0038	0.0024	HEAST	PPRTV
1/9/2012	75-71-8	Dichlorodifluoromethane (CFC-12)			2000		HEAST	
1/9/2012	75-71-8	Dichlorodifluoromethane (CFC-12)			200		HEAST	
1/9/2012	542-75-6	Dichloropropene, 1,3-			20		HEAST	
1/9/2012	77-73-6	Dicyclopentadiene			0.2	7	HEAST	PPRTV
1/9/2012	112-34-5	Diethylene Glycol Monobutyl Ether			200		HEAST	
1/9/2012	112-34-5	Diethylene Glycol Monobutyl Ether			20	0.1	HEAST	PPRTV
1/9/2012	68-12-2	Dimethyl formamide			30		HEAST	
1/9/2012	106-89-8	Epichlorohydrin (l-Chloro-2,3-epoxypropane)			10		HEAST	
1/9/2012	75-00-3	Ethyl chloride (Chloroethane)			10000		HEAST	
1/9/2012	75-34-3	Ethylidene dichloride (1,1-Dichloroethane)			5000		HEAST	
1/9/2012	75-34-3	Ethylidene dichloride (1,1-Dichloroethane)			500		HEAST	
1/9/2012	98-01-1	Furancarboxaldehyde, 2-			500		HEAST	
1/9/2012	98-01-1	Furancarboxaldehyde, 2-			50		HEAST	
1/9/2012	765-34-4	Glycidyl			10		HEAST	
1/9/2012	765-34-4	Glycidyl			1		HEAST	
1/9/2012	77-47-4	Hexachlorocyclopentadiene			0.7		HEAST	
1/9/2012	7439-97-6	Mercury (elemental)			0.3		HEAST	
1/9/2012	0-02-3	Mercury Compounds			0.3		HEAST	
1/9/2012	126-98-7	Methacrylonitrile			7		HEAST	
1/9/2012	126-98-7	Methacrylonitrile			0.7		HEAST	
1/9/2012	74-87-3	Methyl chloride (Chloromethane)			5.6		HEAST	
1/9/2012	108-87-2	Methyl cyclohexane			3000		HEAST	
1/9/2012	108-87-2	Methyl cyclohexane			3000		HEAST	
1/9/2012	78-93-3	Methyl ethyl ketone (2-Butanone)			1000		HEAST	
1/9/2012	108-10-1	Methyl isobutyl ketone (Hexone)			800		HEAST	
1/9/2012	75-09-2	Methylene chloride (Dichloromethane)			3000		HEAST	
1/9/2012	75-09-2	Methylene chloride (Dichloromethane)			400	600	CAL EPA	IRIS
1/9/2012	101-68-8	Methylene diphenyl diisocyanate (MDI)			0.02		HEAST	
1/9/2012	75-86-5	Methyllactonitrile, 2-			10		HEAST	
1/9/2012	98-95-3	Nitrobenzene			20		HEAST	
1/9/2012	79-46-9	Nitropropane, 2-			20		HEAST	
1/9/2012	79-46-9	Nitropropane, 2-			0.004		HEAST	
1/9/2012	85-44-9	Phthalic anhydride			120		HEAST	
1/9/2012	75-56-9	Propylene oxide			30		HEAST	
1/9/2012	100-42-5	Styrene			3000		HEAST	
1/9/2012	76-13-1	Trichloro-1,2,2-trifluoroethane, 1,1,2- (Freon 113)			30000		HEAST	
1/9/2012	76-13-1	Trichloro-1,2,2-trifluoroethane, 1,1,2- (Freon 113)			30000		HEAST	
1/9/2012	120-82-1	Trichlorobenzene, 1,2,4-			2000		HEAST	
1/9/2012	120-82-1	Trichlorobenzene, 1,2,4-			200	2	HEAST	PPRTV
1/9/2012	79-01-6	Trichloroethylene			600	2	CAL EPA	IRIS
1/9/2012	75-69-4	Trichlorofluoromethane (CFC-11)			7000		HEAST	
1/9/2012	75-69-4	Trichlorofluoromethane (CFC-11)			700		HEAST	

RASS version: 2020-12

Values in units of ug/m^3, unless otherwise noted

Date	CAS	Chemical Name / RASS Update	Change	Tox Endpoint	Previous value	New value	Previous Ref. Source	New Ref. Source
1/9/2012	108-05-4	Vinyl acetate			200		HEAST	
1/9/2012	593-60-2	Vinyl bromide			0.29		HEAST	
4/20/2011	106-94-5	1-Bromopropane				5.00E+04		HBV
4/20/2011	106-94-5	1-Bromopropane				4.00E+03		HBV
4/20/2011	106-94-5	1-Bromopropane				2.00E+01		HBV
4/20/2011	96-18-4	1,2,3 Trichloropropane				3.00E-01		IRIS
4/20/2011	3/20/1903	Silica (crystalline, respirable)				3.00E+00		CAL EPA
4/20/2011	10028-15-6	Ozone				1.80E+02		CAL EPA
12/2/2010	106-99-01	1,3 Butadiene			3.01E-01	1.70E-01	HBV	HBV
12/2/2010	110-80-5	Ethylene Glycol Monomethyl Ether (EGME)				6.00E+01		HRV
12/2/2010	79-06-1	Acrylamide				6.00E+00		IRIS
12/2/2010	79-06-1	Acrylamide			7.7E-03	1.0E-01	IRIS	IRIS
12/2/2010	126-99-8	Chloroprene			7	2.00E+01	HEAST	IRIS
12/2/2010	126-99-8	Chloroprene				3.33E-02		IRIS
12/2/2010	106-93-4	1,2 Dibromoethane			none respirator	Nasal	IRIS	IRIS
12/2/2010	77-47-4	Hexachlorocyclopentadiene (HCCPD)				2.00E-01		IRIS
12/2/2010	75-44-5	Phosgene				3.00E-01		IRIS
12/2/2010	67-66-3	Chloroform				4.35E-01		IRIS
12/2/2010	12789-03-6	Chlorodane (Technical) previously 57-74-9				7.00E-01		IRIS
12/2/2010	12789-03-6	Chlorodane (Technical) previously 57-74-10			2.7E-02	1.00E-01	IRIS	IRIS
7/16/2010	(108-86-1)	Bromobenzene				6.00E+01		IRIS
7/16/2010	(108-86-1)	Bromobenzene				2.00E+02		IRIS
7/16/2010	(1306-38-3)	Cerium Oxide and Cerium Compounds				9.00E-01		IRIS
7/16/2010	(591-78-6)	Hexanone-2				3.00E+01		IRIS
7/16/2010	(56-23-5)	Carbon tetrachloride			40	1.00E+02	CAL EPA	IRIS
7/16/2010	(56-23-5)	Carbon tetrachloride			6.7E-01	1.70E+00	IRIS	IRIS
3/3/2010	(25321-22-6)	Dichlorobenzenes				8.00E+02		HRV
3/3/2010	(98-95-3)	Nitrobenzene				2.50E-01		IRIS IUR
3/3/2010	(00-07-9)	Aldehydes corrected sur formaldehyde value			7.70E-01	2.00E+00	HRV	MDH
3/3/2010	(00-08-9)	Tetrachlorodibenzodioxins,Other (Excluding 2,3,7,8) and 00-08-7 Tetrachlorodibenzofurans, Other (Excluding 2,3,7,8)			4.00E-05	deleted	CAL EPA	
3/3/2010	(7664-93-9)	Sulfuric acid (aerosol forms only)			none	1.20E+02		CAL EPA
3/3/2010		The following PBT's were added to gain emission information fo possible fish ingestion analysis. They do not have inhalation to						
3/3/2010	(7664-39-3)	Hydrogen fluoride			13	1.40E+01	CAL EPA	CAL EPA
2/25/2010	(75-07-0)	Acetaldehyde				4.70E+02		CAL EPA
2/25/2010	(7440-38-2)	Arsenic & inorganic arsenic compounds (including arsine)			0.19	2.00E-01	CAL EPA	CAL EPA
2/25/2010	(7440-38-2)	Arsenic & inorganic arsenic compounds (including arsine)			0.03	1.50E-02	CAL EPA	CAL EPA
2/25/2010	(50-00-0)	Formaldehyde			3	9.00E+00	CAL EPA	CAL EPA
2/25/2010	(7439-97-6)	Mercury & inorganic mercury compounds (including Mercuric chloride)			1.8	6.00E-01	CAL EPA	CAL EPA
6/11/2009	(75-71-8)	Dichlorodifluoromethane (CFC-12)				2.00E+02		HEAST
6/11/2009	(76-13-1)	Trichloro-1,2,2-trifluoroethane, 1,1,2- (Freon 113)				3.00E+04		HEAST
6/11/2009	(75-69-4)	Trichlorofluoromethane (CFC-11)				7.00E+02		HEAST
6/1/2009	(7440-02-0)	Nickel			3.20E-02	2.10E-02	CAL EPA	HRV
2/6/2009	(98-95-3)	Nitrobenzene				9.00E+00		IRIS
10/17/2008		Lead standard NAAQS update			1.5	1.50E-01	EPA	EPA
10/6/2008	(128-38-6)	Added Propionaldehyde				8.00E+00		IRIS
8/8/2008		(changes from Jul 2006 adjustments based on TEF changes)						
8/8/2008	35822-46-9	HeptaCDD, 1,2,3,4,6,7,8-				4.00E-03		MPCA
8/8/2008	00-08-5	HeptaCDD, All isomers			4.00E-05	4.00E-03	CAL EPA	MPCA
8/8/2008	67562-39-4	HeptaCDF, 1,2,3,4,6,7,8				4.00E-03		MPCA
8/8/2008	55673-89-7	HeptaCDF, 1,2,3,4,7,8,9				4.00E-03		MPCA
8/8/2008	00-08-4	HeptaCDF, All isomers			4.00E-05	4.00E-03	CAL EPA	MPCA
8/8/2008	00-08-3	HexaCDD, All isomers			4.00E-05	4.00E-04	CAL EPA	MPCA
8/8/2008	39227-28-6	HexaCDD, 1,2,3,4,7,8-				4.00E-04		MPCA
8/8/2008	(57653-85-7)	HexaCDD, 1,2,3,6,7,8-				4.00E-04		MPCA
8/8/2008	(19408-74-3)	HexaCDD, 1,2,3,7,8,9-				4.00E-04		MPCA
8/8/2008	(70648-26-9)	HexaCDF, 1,2,3,4,7,8				4.00E-04		MPCA
8/8/2008	(57117-44-9)	HexaCDF, 1,2,3,6,7,8-				4.00E-04		MPCA
8/8/2008	(72918-21-9)	HexaCDF, 1,2,3,7,8,9-				4.00E-04		MPCA
8/8/2008	(60851-34-5)	HexaCDF, 2,3,4,6,7,8-				4.00E-04		MPCA
8/8/2008	(00-08-2)	HexaCDF, All isomers			4.00E-05	4.00E-04	CAL EPA	MPCA
8/8/2008	(3268-87-9)	OctaCDD, 1,2,3,4,6,7,8,9-				1.33E-01		MPCA
8/8/2008	(3268-87-9)	OctaCDD, 1,2,3,4,6,7,8,9-			4.00E-02	1.20E-01	MPCA2	MPCA
8/8/2008	(39001-02-0)	OctaCDF, 1,2,3,4,6,7,8,9-				1.33E-01		MPCA
8/8/2008	(39001-02-0)	OctaCDF, 1,2,3,4,6,7,8,9-			4.00E-02	1.20E-01	MPCA2	MPCA
8/8/2008	(40321-76-4)	PentaCDD, 1,2,3,7,8-				4.00E-05		MPCA
8/8/2008	(57117-41-6)	PentaCDF, 1,2,3,7,8-				1.33E-03		MPCA

RASS version: 2020-12

Values in units of ug/m^3, unless otherwise noted

Date	CAS	Chemical Name / RASS Update	Change	Tox Endpoint	Previous value	New value	Previous Ref. Source	New Ref. Source
8/8/2008	(57117-41-6)	PentaCDF, 1,2,3,7,8-			2.00E+01	1.20E+01	MPCA2	MPCA
8/8/2008	(57117-31-4)	PentaCDF, 2,3,4,7,8-				1.33E-04		MPCA
8/8/2008	(57117-31-4)	PentaCDF, 2,3,4,7,8-			2.00E+02	1.20E+02	MPCA2	MPCA
8/8/2008	(00-08-1)	Pentachlorodibenzodioxins, All isomers			4.00E-05	4.00E-05	CAL EPA	MPCA
8/8/2008	(00-09-0)	Pentachlorodibenzofurans, All isomers				1.33E-04		MPCA
8/8/2008	(00-09-0)	Pentachlorodibenzofurans, All isomers			2.00E+02	1.20E+02	MPCA2	MPCA
8/8/2008	(00-05-1)	PolyCDF, Total			2.00E+02	1.20E+02	MPCA2	MPCA
8/8/2008	(00-05-1)	PolyCDF, Total			4.00E-05	1.33E-04	MPCA2	MPCA
8/8/2008								
8/8/2008	(51207-31-9)	TetraCDF, 2,3,7,8-				4.00E-04		MPCA
7/24/2008	79-01-6	Trichloroethylene (TCE)			5	3.00E+00	CAL EPA	MDH
4/4/2008	71-55-6	1,1,1-trichloroethane or methyl chloroform			1,000	5000	CAL EPA	IRIS
4/4/2008	71-55-6	1,1,1-trichloroethane or methyl chloroform			0	5000		IRIS
4/4/2008	100-41-4	Ethylbenzene			0	2.50E-06		CAL EPA
8/29/2006	110-54-3	Hexane	Removed appendix screening PPRTV value		200		HEAST	MDH
8/29/2006	106-93-4	Ethylene Dibromide (1,2-dibromoethane)			0.8	9	CAL EPA	IRIS
8/16/2006	91-20-3	Naphthalene			NA	3.40E-05	NA	CAL EPA
8/14/2006		Tetrachloroethylene (Perchloroethylene)			1.7	20	Cal EPA	MDH
8/14/2006		Tetrachloroethylene (Perchloroethylene)			35	100	Cal EPA	MDH
8/14/2006		Formaldehyde			0.77	2	HRV	MDH
8/16/2005		Added 13 Ethanol Industry Chemicals						
1/3/2005	00-01-7	Polycyclic Organic Matter (POM)			5.5E-05 - unit risk	POM chemical	Cal EPA - Surrogate for B(a)P	MDH - MPCA
11/17/2004	00-05-0	Polychlorinated Dibenzodioxins, Total			260	400	MPCA	MPCA
11/17/2004	00-05-1	Polychlorinated Dibenzofurans, Total			130	200	MPCA	MPCA
11/17/2004	00-08-0	Polychlorinated Dibenzo-P-Dioxins And Furans, Total			260	400	MPCA	MPCA
7/6/2004		Dioxin congeners were updated based on an air intake of 20m3						
7/6/2004		Unit risk numbers were updated as a result						
7/6/2004		OCDD and OCDF had chlorines on the wrong carbon groups. Names were change						
7/6/2004		mm factors were updated based on the new dioxin unit ris values						
7/6/2004		1,3-butadiene value was updated in June. Now official on MD webpage						
5/11/2004		Acrolein	HBV - MDH memo dated May 4, 2004		0.19	2	Cal EPA	
4/1/2004		Added IRIS chronic RfC for methyl chloride				90		IRIS
3/15/2004		Removed Cobalt, Phosphorus, and Silver from quantifiabl pages and put cobalt and phosphorus in the "Chem wo IHB						
3/1/2004		Added 2 PBTs:polybrominated biphenyls and polybrominate diphenyl ethers to the "Chem wo IHB" pag						
2/9/2004		Added cyclohexane (new chronic RfC) - new chemical				6000		IRIS

No inputs on this page

AveTime	StackHt(m)	Max	distance(m)=	10	20	30	40	50	60	70	80	90	100	120	140	160	180	200	250	300	350	400	450	500	600	700	800	900	1000	1500	2500	5000	7500	10000
1-hr	1	103924		103924	70528	57366	52015	45370	41857	37954	34262	31127	28522	24091	20590	17816	15594	13789	10523	8368	6862	5762	4281	3344	2707	2251	1910	1647	924	451	168	92	59
1-hr	2	72044		72044	56776	40135	26921	19020	14509	12763	11696	11113	10733	9800	8885	8425	7903	7378	6189	5309	4601	4022	3157	2556	2122	1797	1547	1351	787	386	143	79	51
1-hr	3	59051		59051	48424	38037	31159	25763	22426	19653	17028	14575	12478	9142	6756	5221	4323	3939	3456	3176	2923	2672	2230	1905	1647	1438	1267	1126	692	354	133	74	48
1-hr	4	85665		85665	32760	26988	22242	19094	16634	14454	12411	11471	10678	9399	8423	7509	6641	5834	4162	3011	2301	1895	1552	1382	1236	1108	997	909	603	328	129	71	47
1-hr	5	52405		52405	23451	20275	17000	14621	12817	11468	10319	9167	8073	7184	6508	5958	5501	5112	4284	3556	2916	2372	1599	1180	963	852	781	723	510	301	126	71	47
1-hr	6	31949		31949	14659	13718	12124	10592	9326	8406	7613	6951	6450	5457	4919	4565	4267	4010	3501	3118	2783	2455	1858	1389	1043	814	672	588	432	278	128	75	50
1-hr	7	21101		21101	16974	8985	8275	7521	6825	6206	5690	5306	4961	4364	3772	3461	3234	3038	2647	2351	2140	1971	1657	1352	1080	858	690	567	337	246	126	78	53
1-hr	8	14643		14643	13453	6344	5844	5292	4910	4559	4242	3957	3700	3258	2879	2586	2431	2295	2045	1856	1703	1577	1379	1205	1029	861	708	578	276	197	120	78	55
1-hr	9	10451		10451	10404	5876	4392	4181	3939	3688	3450	3232	3033	2693	2413	2182	2028	1924	1731	1580	1457	1355	1193	1070	959	845	732	623	246	163	106	75	56
1-hr	10	7915		7915	7887	5997	3549	3419	3267	3091	2917	2752	2599	2330	2105	1916	1755	1644	1470	1333	1221	1128	980	884	807	737	665	593	271	137	85	67	53
1-hr	11	6055		6055	6040	5335	2852	2811	2670	2537	2409	2285	2168	1958	1780	1629	1499	1387	1230	1122	1043	978	874	793	728	673	624	572	316	115	75	54	46
1-hr	12	4814		4814	4814	4629	3386	2421	2327	2197	2069	1973	1880	1712	1566	1440	1332	1237	1073	984	911	848	747	673	620	576	539	505	322	98	65	49	39
1-hr	13	4032		4032	4032	4018	3112	1958	1918	1836	1739	1660	1590	1457	1340	1238	1149	1070	914	837	777	726	653	598	552	515	483	455	319	91	56	43	35
1-hr	14	3443		3443	3443	3433	3029	1784	1690	1631	1555	1474	1409	1298	1199	1111	1034	966	828	744	693	649	583	536	497	464	436	411	307	112	48	38	31
1-hr	15	2978		2978	2978	2970	2856	2149	1447	1415	1361	1299	1235	1131	1051	979	915	858	740	653	610	573	513	473	439	412	388	367	285	126	42	33	28
1-hr	16	2614		2614	2614	2608	2601	2020	1307	1288	1247	1196	1142	1037	968	904	847	796	690	607	560	527	473	433	404	379	358	339	270	137	40	29	24
1-hr	17	2305		2305	2305	2301	2295	1973	1375	1115	1090	1054	1013	948	888	833	783	737	642	568	514	485	437	399	367	341	323	306	247	141	38	26	22
1-hr	18	2053		2053	2053	2050	2045	1943	1424	1021	1005	976	942	867	797	750	706	667	584	518	465	436	395	361	335	316	299	285	231	143	34	25	20
1-hr	19	1830		1830	1830	1827	1824	1764	1422	900	893	874	848	787	736	695	657	622	547	487	438	405	367	337	313	295	280	266	217	143	31	24	18
1-hr	20	1642		1642	1642	1640	1637	1633	1367	1052	819	806	785	734	680	632	598	568	501	448	404	368	335	308	285	268	254	243	199	138	29	22	18
1-hr	21	1485		1485	1485	1483	1481	1478	1315	1079	732	725	710	669	624	589	559	531	471	423	382	349	313	289	268	251	239	228	188	135	26	20	17
1-hr	22	1345		1345	1345	1345	1343	1340	1304	1049	731	677	666	631	591	551	513	488	435	391	355	324	287	265	248	235	224	214	178	131	28	19	15
1-hr	23	1228		1228	1228	1228	1227	1224	1188	1025	836	606	600	574	541	507	484	461	412	371	337	309	270	250	233	218	206	197	164	123	32	17	14
1-hr	24	1122		1122	1122	1122	1121	1119	1117	970	816	569	564	543	514	483	452	424	381	344	314	288	249	231	216	204	195	186	156	119	36	16	13
1-hr	25	1030		1030	1030	1030	1027	1025	1023	1002	807	613	515	499	475	449	422	402	362	328	300	275	237	219	205	192	182	172	145	112	38	15	12
1-hr	26	954		954	954	954	950	947	945	932	797	657	486	473	452	428	404	381	344	313	286	264	227	208	195	183	173	164	138	107	41	14	11
1-hr	27	886		886	886	886	883	879	873	862	763	640	452	434	417	397	376	355	321	292	268	247	213	193	181	171	162	155	131	103	43	13	11
1-hr	28	826		826	826	826	823	819	814	811	768	636	518	412	398	380	361	341	307	280	257	237	206	184	173	163	154	147	122	96	44	12	10
1-hr	29	772		772	772	772	769	766	762	757	744	636	538	381	370	355	338	321	286	262	241	223	194	172	161	152	145	138	117	92	45	12	9
1-hr	30	722		722	722	722	720	717	713	709	694	614	526	361	352	339	323	308	274	251	232	215	187	165	154	146	139	132	112	89	46	13	9
1-hr	31	677		677	677	677	676	673	670	666	662	595	514	335	328	317	304	290	257	236	218	202	176	156	145	137	130	124	106	84	46	14	8
1-hr	32	634		634	634	634	634	632	629	626	622	606	519	320	314	304	292	279	248	224	208	193	169	150	137	130	124	118	99	79	45	16	8
1-hr	33	597		597	597	597	597	595	593	590	587	569	501	348	292	284	274	263	234	216	200	186	163	145	132	125	119	113	95	76	45	17	8
1-hr	34	564		564	564	564	564	562	560	558	555	534	475	381	274	268	259	249	224	207	192	179	157	140	126	120	114	109	92	74	45	18	7
1-hr	35	534		534	534	534	534	532	530	528	525	522	498	375	263	257	249	240	216	196	182	170	150	133	120	113	108	103	87	70	44	19	7
1-hr	36	506		506	506	506	506	504	502	500	498	495	475	359	245	241	235	227	205	188	175	164	144	129	116	109	104	99	83	67	44	20	7
1-hr	37	478		478	478	478	478	477	476	474	472	469	448	361	235	232	226	219	199	179	167	156	138	123	111	103	99	94	80	65	43	21	7
1-hr	38	455		455	455	455	455	454	452	451	449	447	435	359	252	219	214	208	189	172	161	151	133	119	108	99	95	91	76	62	42	21	7
1-hr	39	429		429	429	429	429	428	427	426	424	422	420	343	272	208	204	199	182	165	154	144	128	114	104	95	90	87	74	60	41	22	8
1-hr	40	409		409	409	409	409	408	407	406	404	403	401	343	281	201	197	192	177	161	149	140	124	111	101	92	87	84	70	57	40	22	9
1-hr	41	390		390	390	390	390	390	389	387	386	384	383	332	283	189	186	182	168	154	144	135	120	108	98	90	84	81	68	55	39	22	9
1-hr	42	373		373	373	373	373	373	372	371	370	368	367	345	268	182	180	176	163	150	137	129	115	104	94	86	81	77	65	53	38	23	10
1-hr	43	357		357	357	357	357	357	356	355	354	352	351	328	268	188	171	168	156	144	132	124	111	100	91	83	77	74	63	52	37	23	10
1-hr	44	341		341	341	341	341	341	341	340	339	337	336	313	266	205	165	162	152	140	128	121	108	97	89	81	75	72	61	49	36	23	11
1-hr	45	327		327	327	327	327	327	326	325	324	323	322	304	260	217	157	155	145	134	123	116	104	94	85	78	72	69	58	48	35	23	11
1-hr	46	314		314	314	314	314	314	313	312	311	310	309	307	262	220	152	150	141	131	120	112	101	91	83	76	71	67	57	47	34	23	12
1-hr	47	301		301	301	301	301	301	300	300	299	298	297	295	251	213	144	143	135	125	116	109	98	89	81	75	69	65	55	45	33	22	12
1-hr	48	290		290	290	290	290	290	289	289	288	287	286	284	245	208	147	139	132	122	113	105	94	86	78	72	67	62	53	43	32	22	12
1-hr	49	279		279	279	279	279	279	278	278	277	276	275	273	250	208	158	133	126	118	109	102	92	84	76	70	65	61	52	42	31	22	13
1-hr	50	268		268	268	268	268	268	268	267	267	266	265	263	239	205	169	129	123	115	107	99	89	81	74	68	63	59	50	41	30	22	13
1-hr	51	258		258	258	258	258	258	258	257	257	256	255	254	230	204	172	123	118	111	103	95	86	78	72	66	61	57	48	40	30	22	13
1-hr	52	248		248	248	248	248	248	248	248	247	247	246	245	226	201	171	120	115	108	101	94	84	76	70	65	60	56	47	38	29	21	13
1-hr	53	240		240	240	240	240	240	240	240	239	238	238	236	233	199	167	122	111	104	97	91	82	75	69	63	59	56	46	37	28	21	13
1-hr	54	232		232	232	232	232	232	232	231	231	230	230	228	227	192	162	127	108	102	95	89	79	72	66	61	57	53	44	36	27	21	13
1-hr	55	224		224	224	224	224	224	224	223	223	222	222	221	219	188	166	135	104	98	92	86	77	70	65	60	56	52	43	35	26	21	14
1-hr	56	216		216	216	216	216	216	216	216	215	215	214	213	212	189	164	141	101	96	90	84	74	68	63	58	54	51	42	34	26	20	14
1-hr	57	208		208	208	208	208	208	208	208	207	207	207	205	204	182	164	142	98	93	88	82	73	67	61	57	53	50	41	33	25	20	14
1-hr	58	202		202	202	202	202	202	202	201	201	201	200	199	198	176	159	141	94	90	85	79	71	65	60	55	52	48	39	32	25	20	14
1-hr	59	195		195	195	195	195	195	195	195	195	194	194	193	192	174	162	137	92	88	83	78	69	63	59	54	51	47	38	31	24	19	14
1-hr	60	189		189	189	189	189	189	189	189	188	188	188	187	186	179	157	133	89	85	80	76	67	62	57	53	49	46	37	30	23	19	14
1-hr	61	183		183	183	183	183	183	183	183	183	182	182	181	180	179	152	135	87	83	79	74	65	60	56	52	48	45	36	30	23	19	14
1-hr	62	177		177	177	177	177	177	177	177	177	177	177	176	175	174	150	134	83	80	76	72	64	58	54	50	47	44	35	29	22	18	13
1-hr	63	172		172	172	172	172	172	172	172	172	172	171	171	170	169	148	135	81	79	75	71	63	57	53	49	46	43	35	28	22	18	13
1-hr	64	167		167	167	167	167	167	167	167	167	167	166	166	165	164	144	131	79	76	73	69	61	56	52	48	45	42	34	27	21	18	13
1-hr	65	162		162	162	162	162	162	162	162	162	162	162	161	160	159	140	133	77	74	71	67	60	55	51	47	44	42	33	27	21	17	13
1-hr	66	158		158	158	158	158	158	158	158	157	157	157	156	156	155	139	130	76	72	69	65	58	53	49	46	43	40	32	26	20	17	13
1-hr	67	153		153	153	153	153	153	153	153	153	153	153	152	151	151	142	127	80	71	68	64	57	52	48	45	42	40	31	25	20	17	13
1-hr	68	149		149	149	149	149	149	149	149	149	149	148	148	147	146	145	123	85	68	66	62	56	51	47	44	41	39	30	25	19	16	13
1-hr	69	145		145	145	145	145	145	145	145	145	145	144	144	143	143	142	123	89	67	64	61	55	50	46	43	40	38	30	24	19	16	13
1-hr	70	141		141	141	141	141	141	141	141	141	141	141	140	140	139	138	121	93	65	63	60	54	49	45	42	40	37	29	24	18	16	13
1-hr	71	137		137	137	137	137	137	137	137	137	137	137	136	136	135	135	118	92	64	61	59	53	48	44	42	39	37	29	23	18	15	12
1-hr	72	134		134	134	134	134	134	134	134	134	134	133	133	132	132	131	115	91	62	60	57	51	46	43	40	38	36	28	23	18	15	12
1-hr	73	130		130	130	130	130	130	130	130	130	130	130	130	129	128	128	113	91	61	59	56	51	46	42	40	37	35	27	22	17	15	12
1-hr	74	127		127	127	127	127	127	127	127	127	127	127	126	126	125	125	116	88	59	57	55	49	45	41	39	36	34	27	22	17	14	12
1-hr	75	124		124	124	124	124	124	124	124	124	124	124	123	123	122	122	119	87	58	56	54	49	44	41	38	36	34	26	21	17	14	12
1-hr	76	121		121	121	121	121	121	121	121	121	121	121	120	120	119	119	118	88	56	54	52	48	43	40	37	35	33	26	21	16	14	12
1-hr	77	118		118	118	118	118	118	118	118	118	118	118	117	117	116	116	115	88	55	53	51	47	42	39	37	35	33	25	20	16	14	11
1-hr	78	115		115	115	115	115	115	115	115	115	115	115	114	114	113	113	112	88	53	52	50	46	42	38	36	34	32	25	20	16	13	11
1-hr	79	112		112	112	112	112	112	112	112	112	112	112	112	111	111	110	110	86	53	51	49	45	41	38	35	33	31	25	20	15	13	11
1-hr	80	109		109	109	109	109	109	109	109	109	109	109	109	109	108	108	107	85	56	50	48	44	40	37	35	33	31	24	19	15	13	11
1-hr	81	107		107	107	107	107	107	107	107	107	107	107	106	106	106	105	105	87	58	49	47	43	40	36	34	32	30	24	19	15	13	11
1-hr	82	104		104	104	104	104	104	104	104	104	104	104	104	104	103	103	103	86	61	48	46	43	39	35	33	31	30	23	19	14	12	11
1-hr	83	102		102	102	102	102	102	102	102	102	102	102	102	101	101	101	100	84	63	47	46	42	38	35	33	31	29	23	18	14	12	11
1-hr	84	100		100	100	100	100	100	100	100	100	100	100	99	99	99	98	98	82	65	46	44	41	37	34	32	30	29	23	18	14	12	10
1-hr	85	98		98	98	98	98	98	98	98	98	98	98	97	97	97	96	96	80	64	45	44	40	37	34	32	30	28	22	18	14	12	10
1-hr	86	96		96	96	96	96	96	96	96	96	96	95	95	95	95	94	94	81	63	44	43	39	36	33	31	29	28	22	17	13	12	10
1-hr	87	94		94	94	94	94	94	94	94	94	94	93	93	93	93	92	92	80	63	43	42	39	36	33	30	29	27	22	17	13	11	10
1-hr	88	92		92	92	92	92	92	92	92	92	92	91	91	91	91	90	90	78	63	42	41	38	35	32	30	28	27	21	17	13	11	10
1-hr	89	90		90	90	90	90	90	90	90	90	90	90	89	89	89	89	88	77	61	41	40	38	35	32	29	28	26	21	16	13	11	10
1-hr	90	88		88	88	88	88	88	88	88	88	88	88	88	87	87	87	86	75	62	40	39	37	34	31	29	27	26	21	16	12	11	10
1-hr	91	86		86	86	86	86	86	86	86	86	86	86	86	86	85	85	85	75	62	40	39	36	33	31	28	27	26	20	16	12	11	9
1-hr	92	84		84	84	84	84	84	84	84	84	84	84	84	84	84	83	83	76	62	39	38	35	33	30	28	27	25	20	16	12	10	9
1-hr	93	83		83	83	83	83	83	83	83	83	83	83	82	82	82	82	81	78	61	41	37	35	32	30	27	26	25	20	15	12	10	9
1-hr	94	81		81	81	81	81	81	81	81	81	81	81	81	81	80	80	80	79	61	43	37	34	32	29	27	26	24	19	15	12	10	9
1-hr	95	79		79	79	79	79	79	79	79	79	79	79	79	79	79	79	78	78	60	44	36	34	31	29	27	25	24	19	15	11	10	9
1-hr	96	78		78	78	78	78	78	78	78	78	78	78	78	78	77	77	77	76	60	46	35	33	31	28	26	25	24	19	14	11	10	9

No inputs on this page

AveTime	StackHt(m)	Max	distance(m)=	10	20	30	40	50	60	70	80	90	100	120	140	160	180	200	250	300	350	400	500	600	700	800	900	1000	1500	2500	5000	7500	10000
1-hr	97	76		76	76	76	76	76	76	76	76	76	76	76	76	76	76	75	75	61	47	35	33	30	28	26	24	23	19	14	11	10	9
1-hr	98	75		75	75	75	75	75	75	75	75	75	75	75	75	74	74	74	73	60	47	34	32	30	28	25	24	23	18	14	11	9	8
1-hr	99	73		73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	72	59	47	33	32	29	27	25	24	22	18	14	11	9	8
AveTime	StackHt(m)	Max	distance(m)=	10	20	30	40	50	60	70	80	90	100	120	140	160	180	200	250	300	350	400	500	600	700	800	900	1000	1500	2500	5000	7500	10000
3-hr	1	97527		97527	59325	53770	43547	35187	30119	26217	22897	20121	17805	14228	11647	9920	8614	7566	5699	4487	3650	3044	2235	1730	1389	1146	966	828	453	207	69	37	24
3-hr	2	61170		61170	43518	31321	22727	16810	13611	11941	10891	10042	9273	7918	6804	5985	5406	4888	3848	3099	2589	2235	1722	1375	1130	949	811	703	399	190	65	34	21
3-hr	3	49908		49908	40404	31631	25123	19798	15867	12635	10107	8213	6846	5089	4379	3940	3596	3298	2677	2236	1931	1686	1311	1075	913	786	685	603	359	177	63	33	21
3-hr	4	58187		58187	26070	21906	18035	15168	13232	11414	9727	8252	6965	5211	4540	3955	3421	2949	2053	1702	1486	1305	1050	869	733	629	563	506	320	166	62	33	21
3-hr	5	38526		38526	17039	15111	13165	11507	10127	8978	8013	7113	6248	4766	4113	3582	3127	2826	2162	1704	1375	1052	862	720	620	541	476	423	280	155	61	33	21
3-hr	6	23356		23356	11192	9954	8567	7684	6978	6371	5844	5383	4976	4190	3466	3020	2745	2505	2017	1708	1429	1190	739	610	535	472	418	374	241	145	62	35	22
3-hr	7	15141		15141	12323	6402	5812	5265	4760	4312	3921	3582	3285	2797	2471	2265	2088	1933	1614	1363	1216	1076	827	552	442	396	362	331	219	128	60	35	23
3-hr	8	10301		10301	10139	4626	4374	4007	3649	3341	3075	2839	2629	2274	1989	1784	1658	1545	1314	1133	997	910	754	611	421	348	301	273	198	116	57	35	24
3-hr	9	7246		7246	7246	4052	3282	3072	2840	2619	2420	2241	2093	1838	1629	1454	1320	1240	1071	936	826	740	636	546	459	326	277	246	170	107	53	33	23
3-hr	10	5440		5440	5440	4540	2566	2447	2292	2135	1989	1855	1734	1527	1364	1228	1112	1019	891	787	700	630	546	481	422	365	264	226	147	97	50	32	22
3-hr	11	4285		4285	4285	4263	2104	2026	1912	1793	1679	1574	1478	1312	1174	1058	963	882	757	675	606	547	477	423	380	339	250	220	131	86	45	31	22
3-hr	12	3448		3448	3448	3433	2463	1599	1529	1448	1366	1288	1216	1089	981	890	812	747	627	564	510	464	401	357	322	293	266	203	120	75	41	28	21
3-hr	13	2850		2850	2850	2840	2356	1333	1284	1223	1160	1099	1041	939	851	776	711	655	547	488	444	406	351	315	285	261	239	219	108	66	39	25	20
3-hr	14	2373		2373	2373	2366	2355	1274	1103	1056	1006	957	910	825	752	688	633	585	491	428	392	360	311	280	255	233	215	199	108	58	36	24	17
3-hr	15	1988		1988	1988	1983	1976	1467	920	891	855	818	781	714	654	602	556	516	435	375	343	316	274	248	227	208	193	179	104	51	32	23	17
3-hr	16	1722		1722	1722	1718	1713	1423	814	792	763	732	701	643	592	546	506	471	398	345	310	287	251	228	209	193	179	167	101	46	29	21	16
3-hr	17	1498		1498	1498	1498	1494	1473	986	707	684	658	632	583	538	498	463	432	368	319	281	262	232	211	194	179	167	156	96	47	26	20	15
3-hr	18	1318		1318	1318	1318	1315	1311	977	608	592	573	553	513	476	442	413	386	331	288	255	233	207	190	175	162	151	141	106	48	22	18	14
3-hr	19	1165		1165	1165	1165	1162	1159	991	635	535	520	502	468	435	406	379	356	306	267	237	213	192	176	163	151	141	132	100	48	19	16	13
3-hr	20	1036		1036	1036	1036	1034	1032	981	760	475	464	450	420	391	366	343	322	279	244	217	195	173	160	148	138	129	121	93	46	17	15	12
3-hr	21	924		924	924	924	923	921	918	721	440	428	416	390	364	338	318	299	260	229	204	184	162	149	139	130	122	115	88	46	17	13	11
3-hr	22	842		842	842	842	839	837	835	734	530	397	388	365	342	317	298	281	246	217	193	175	152	140	131	122	115	108	84	46	16	11	10
3-hr	23	768		768	768	768	764	762	761	703	604	357	351	333	313	294	274	259	227	201	180	163	139	129	121	113	106	100	78	44	15	10	9
3-hr	24	703		703	703	703	699	697	696	694	561	370	326	310	293	276	258	244	215	191	171	155	131	122	114	107	101	95	75	43	14	9	8
3-hr	25	646		646	646	646	644	643	642	640	565	444	306	293	278	262	247	231	204	182	163	148	125	115	108	102	96	91	71	42	13	9	7
3-hr	26	597		597	597	597	596	591	590	589	533	467	280	268	255	242	229	213	189	169	153	139	117	107	100	94	89	85	67	40	14	9	6
3-hr	27	554		554	554	554	554	548	546	545	544	450	326	253	241	229	218	202	180	161	146	133	113	101	95	90	85	81	64	38	14	8	6
3-hr	28	515		515	515	515	515	509	506	505	504	449	373	238	228	217	206	196	170	153	139	126	107	94	89	84	80	76	61	36	15	8	6
3-hr	29	478		478	478	478	478	473	469	469	468	433	350	219	211	202	192	183	160	144	131	120	102	90	84	80	76	72	58	41	15	7	6
3-hr	30	445		445	445	445	445	442	438	437	437	436	366	207	200	192	183	175	153	138	126	115	98	87	80	76	73	69	56	40	15	7	5
3-hr	31	416		416	416	416	416	414	409	408	408	407	365	198	190	183	175	167	146	132	119	109	93	82	75	72	68	65	53	38	15	6	5
3-hr	32	390		390	390	390	390	388	384	383	383	382	355	219	177	171	164	157	138	125	114	105	90	79	72	68	65	62	51	37	15	6	5
3-hr	33	366		366	366	366	366	365	362	360	360	359	355	249	168	163	156	150	132	120	110	101	87	76	69	66	63	60	49	35	15	6	4
3-hr	34	343		343	343	343	343	343	340	339	339	338	337	272	160	155	149	143	129	115	105	96	83	73	66	62	59	57	46	34	15	6	4
3-hr	35	324		324	324	324	324	324	321	320	320	319	319	245	153	149	144	138	125	111	101	93	80	70	63	59	57	54	45	33	15	6	4
3-hr	36	305		305	305	305	305	305	303	302	302	302	301	248	144	139	135	130	118	105	96	89	77	67	61	56	54	51	43	31	15	7	4
3-hr	37	288		288	288	288	288	288	287	286	286	286	285	256	159	133	129	125	113	101	93	86	74	65	59	54	52	50	41	30	15	7	4
3-hr	38	273		273	273	273	273	273	272	271	271	271	270	251	179	128	124	120	110	98	90	83	72	63	57	52	50	48	40	30	14	7	4
3-hr	39	258		258	258	258	258	258	258	257	257	257	256	244	194	120	117	113	104	93	86	79	69	61	54	50	47	45	38	28	14	7	3
3-hr	40	246		246	246	246	246	246	245	245	244	244	244	243	197	115	113	109	100	90	83	77	67	59	53	48	45	44	37	28	14	7	3
3-hr	41	233		233	233	233	233	233	233	233	232	232	232	231	184	112	108	105	97	89	80	75	65	57	51	47	44	42	36	27	14	7	3
3-hr	42	222		222	222	222	222	222	222	222	222	221	221	221	184	119	102	100	92	85	77	71	62	55	49	45	42	40	34	26	13	8	3
3-hr	43	212		212	212	212	212	212	212	212	212	211	211	211	189	134	99	96	89	82	75	69	60	54	48	44	41	39	33	25	13	8	3
3-hr	44	202		202	202	202	202	202	202	202	202	202	201	201	187	145	95	93	86	80	72	67	59	52	47	43	40	38	32	24	13	8	4
3-hr	45	193		193	193	193	193	193	193	193	193	193	193	192	178	154	90	88	82	76	69	65	57	50	45	41	38	36	31	23	13	8	4
3-hr	46	185		185	185	185	185	185	185	185	185	185	184	184	184	141	88	85	80	74	67	63	55	49	44	40	37	35	30	23	12	8	4
3-hr	47	177		177	177	177	177	177	177	177	177	177	177	176	176	141	94	82	77	72	65	61	53	47	43	39	36	34	29	22	12	7	4
3-hr	48	170		170	170	170	170	170	170	170	170	170	169	169	169	143	104	80	75	70	65	59	52	46	42	38	35	33	28	21	12	7	4
3-hr	49	163		163	163	163	163	163	163	163	163	163	163	162	162	146	112	76	72	67	62	57	50	45	41	37	34	32	27	21	12	7	4
3-hr	50	157		157	157	157	157	157	157	157	156	156	156	156	156	145	119	73	69	65	60	55	49	44	39	36	33	31	26	20	11	7	4
3-hr	51	151		151	151	151	151	151	151	151	150	150	150	150	150	138	119	72	68	63	59	54	48	43	38	35	32	30	25	20	11	7	4
3-hr	52	145		145	145	145	145	145	145	145	145	145	145	144	144	140	110	75	65	61	57	52	46	41	38	34	31	29	24	19	11	7	4
3-hr	53	140		140	140	140	140	140	140	140	139	139	139	139	139	138	113	83	63	59	55	51	45	40	36	33	30	28	24	19	10	7	4
3-hr	54	134		134	134	134	134	134	134	134	134	134	134	134	134	133	114	90	61	57	54	51	44	39	36	32	30	28	23	18	10	7	4
3-hr	55	130		130	130	130	130	130	130	130	130	130	129	129	129	129	116	95	59	56	52	49	43	38	35	32	29	27	22	18	10	7	5
3-hr	56	125		125	125	125	125	125	125	125	125	125	125	125	124	124	116	100	57	54	51	48	42	37	34	31	28	27	22	17	10	7	5
3-hr	57	121		121	121	121	121	121	121	121	121	121	121	120	120	120	113	91	55	52	49	46	41	36	33	30	28	26	21	17	11	7	5
3-hr	58	117		117	117	117	117	117	117	117	117	117	117	116	116	116	110	91	54	51	48	45	40	36	32	29	27	25	20	16	11	7	5
3-hr	59	113		113	113	113	113	113	113	113	113	113	113	113	112	112	112	93	52	49	47	44	38	35	31	29	27	25	20	16	10	7	5
3-hr	60	109		109	109	109	109	109	109	109	109	109	109	109	109	109	108	93	51	48	46	43	38	34	31	28	26	24	19	16	10	7	5
3-hr	61	106		106	106	106	106	106	106	106	106	106	106	105	105	105	105	95	49	47	44	42	37	33	30	28	25	24	19	15	10	6	5
3-hr	62	102		102	102	102	102	102	102	102	102	102	102	102	102	102	101	95	48	45	43	41	36	32	29	27	25	23	18	15	10	6	4
3-hr	63	99		99	99	99	99	99	99	99	99	99	99	99	99	98	98	92	47	44	42	40	35	32	29	26	24	23	18	14	10	6	4
3-hr	64	96		96	96	96	96	96	96	96	96	96	96	96	95	95	95	89	45	43	41	39	34	31	28	26	24	22	17	14	9	6	4
3-hr	65	93		93	93	93	93	93	93	93	93	93	93	93	93	92	92	91	49	42	40	38	33	30	28	25	23	22	17	14	9	6	4
3-hr	66	90		90	90	90	90	90	90	90	90	90	90	90	90	90	90	89	53	41	39	37	33	30	27	25	23	21	17	14	9	6	4
3-hr	67	88		88	88	88	88	88	88	88	88	88	87	87	87	87	87	87	57	40	38	36	32	29	26	24	23	21	16	13	9	6	4
3-hr	68	85		85	85	85	85	85	85	85	85	85	85	85	85	85	85	84	60	39	37	35	32	28	26	24	22	20	16	13	9	6	4
3-hr	69	83		83	83	83	83	83	83	83	83	83	83	82	82	82	82	82	63	38	36	34	31	28	25	23	22	20	15	13	8	6	4
3-hr	70	80		80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	65	37	35	34	31	27	25	23	21	20	15	12	8	6	4
3-hr	71	78		78	78	78	78	78	78	78	78	78	78	78	78	78	78	77	59	36	34	33	30	27	24	22	21	19	15	12	8	6	4
3-hr	72	76		76	76	76	76	76	76	76	76	76	76	76	76	76	75	75	59	35	34	32	29	26	24	22	20	19	14	12	8	5	4
3-hr	73	74		74	74	74	74	74	74	74	74	74	74	74	74	74	73	73	59	34	33	31	29	26	24	22	20	19	14	12	8	5	4
3-hr	74	72		72	72	72	72	72	72	72	72	72	72	72	72	72	71	71	59	33	32	31	28	25	23	21	20	18	14	11	8	5	4
3-hr	75	70		70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	60	33	31	30	27	25	23	21	19	18	14	11	8	5	4
3-hr	76	68		68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	62	32	31	29	27	24	22	20	19	18	13	11	7	5	4
3-hr	77	66		66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	62	33	30	29	26	24	22	20	19	17	13	11	7	5	4
3-hr	78	65		65	65	65	65	65	65	65	65	65	65	65	65	64	64	64	61	35	29	28	26	23	21	20	18	17	13	10	7	5	4
3-hr	79	63		63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	59	37	29	28	25	23	21	19	18	17	13	10	7	5	4
3-hr	80	61		61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	58	39	28	27	25	23	21	19	18	17	13	10	7	5	4
3-hr	81	60		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	59	41	27	26	24	22	20	19	17	16	12	10	7	5	4
3-hr	82	58		58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	43	27	26	24	22	20	18	17	16	12	10	7	5	4
3-hr	83	57		57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	44	26	25	23	21	19	18	17	16	12	9	7	4	4
3-hr	84	56		56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	55	43	26	25	23	21	19	18	16	15	12	9	7	4	4
3-hr	85	54		54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	41	25	24	22	21	19	17	16	15	12	9	6	5	4
3-hr	86	53		53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	41	25	24	22	20	18	17	16	15	11	9	6	5	4
3-hr	87	52		52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	41	24	23	22	20	18	17	16	15	11	9	6	5	4
3-hr	88	51		51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	50	42	24	23	21	20	18	17	15	15	11	9	6	5	3
3-hr	89	50		50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	49	42	23	22	21	19	18	16	15	14	11	8	6	5	3
3-hr	90	49		49	49	49	49	49	49	49	49	49	49	49	49	48	48	48	48	42	24	22	20	19	17	16	15	14	11	8	6	5	3
3-hr	91	48		48	48	48	48	48	48	48	48	48	48	48	47	47	47	47	47	43	26	22	20	19	17	16	15	14	11	8	6	4	3
3-hr	92	47		47	47	47	47	47	47	47	47	47	47	47	46	46	46	46	46	44	27	21	20	18	17	16	15	14	10	8	6	4	3

No inputs on this page

AveTime	StackHt(m)	Max	distance(m)=	10	20	30	40	50	60	70	80	90	100	120	140	160	180	200	250	300	350	400	500	600	700	800	900	1000	1500	2500	5000	7500	10000
3-hr	93	46		46	46	46	46	46	46	46	46	46	46	46	45	45	45	45	45	43	29	21	19	18	16	15	14	13	10	8	6	4	3
3-hr	94	45		45	45	45	45	45	45	45	45	45	45	45	45	45	44	44	44	42	30	20	19	18	16	15	14	13	10	8	6	4	3
3-hr	95	44		44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	43	41	31	20	19	17	16	15	14	13	10	8	6	4	3
3-hr	96	43		43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	40	32	20	18	17	16	15	14	13	10	7	5	4	3
3-hr	97	42		42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	41	33	19	18	17	16	14	13	13	10	7	5	4	3
3-hr	98	41		41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	32	19	18	17	15	14	13	13	10	7	5	4	3
3-hr	99	40		40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	30	19	18	16	15	14	13	12	9	7	5	4	3
AveTime	StackHt(m)	Max	distance(m)=	10	20	30	40	50	60	70	80	90	100	120	140	160	180	200	250	300	350	400	500	600	700	800	900	1000	1500	2500	5000	7500	10000
8-hr	1	67249		67249	44909	34196	25427	22462	19509	16908	14725	12913	11410	9101	7443	6214	5278	4548	3292	2510	1987	1619	1143	857	672	544	451	387	216	103	37	20	13
8-hr	2	40952		40952	30112	21194	15173	11281	9046	7694	6747	5996	5365	4681	4256	3840	3460	3124	2455	1976	1626	1364	1003	773	616	505	422	360	193	88	32	17	11
8-hr	3	34949		34949	25092	17250	13201	10625	8538	7329	6289	5345	4516	3110	2663	2325	2053	1848	1623	1412	1227	1072	834	667	546	456	387	333	185	85	30	16	10
8-hr	4	45444		45444	15947	12096	9329	7745	6497	5610	4578	4172	3825	3266	2832	2454	1938	1687	1220	971	864	785	654	549	465	398	345	301	174	84	29	15	10
8-hr	5	29231		29231	10336	8003	6213	5232	4500	3910	3513	3188	2862	2308	2037	1817	1637	1488	1087	894	748	632	497	430	378	333	296	264	161	82	29	15	10
8-hr	6	17569		17569	7139	5769	4601	3874	3411	3019	2689	2409	2172	1828	1540	1390	1264	1157	949	744	621	539	415	333	291	262	238	218	145	78	30	16	10
8-hr	7	11318		11318	9409	4317	3559	2954	2645	2377	2144	1942	1767	1481	1272	1085	995	918	764	650	560	491	363	292	246	215	193	175	123	70	30	17	11
8-hr	8	7673		7673	7246	3054	2661	2260	1954	1782	1627	1490	1369	1166	1005	879	757	702	592	515	472	432	352	273	228	194	170	152	105	63	29	17	11
8-hr	9	5316		5316	5203	3635	2206	1915	1651	1472	1358	1255	1162	1003	874	769	682	629	503	436	393	366	319	270	217	185	160	140	92	57	25	16	11
8-hr	10	4034		4034	4034	3677	1887	1662	1451	1270	1180	1097	1021	890	781	692	616	553	438	383	339	303	265	236	194	169	149	131	82	52	24	15	11
8-hr	11	3219		3219	3219	3072	1518	1351	1204	1067	965	905	849	749	665	594	533	482	395	325	290	261	217	200	181	152	135	120	74	47	23	14	10
8-hr	12	2649		2649	2649	2548	2157	1175	1058	946	846	783	738	658	588	529	478	434	348	285	256	231	193	170	159	146	124	112	69	41	22	14	9
8-hr	13	2208		2208	2208	2136	1973	1028	936	845	762	692	655	588	529	478	434	395	319	272	229	207	174	149	133	126	117	100	64	36	21	13	9
8-hr	14	1859		1859	1859	1808	1739	1094	794	726	661	601	555	503	456	415	379	348	284	237	199	181	153	132	115	109	103	90	60	32	19	13	9
8-hr	15	1579		1579	1579	1543	1492	1227	710	655	600	549	505	460	419	383	351	323	266	222	195	166	141	122	107	95	89	85	56	29	18	12	9
8-hr	16	1350		1350	1350	1350	1310	1221	654	597	551	506	466	420	385	354	326	301	249	210	181	153	131	114	100	89	79	76	53	27	16	11	8
8-hr	17	1186		1186	1186	1186	1156	1118	827	532	494	458	423	385	355	327	303	280	234	198	170	152	122	107	94	84	75	66	49	24	14	11	8
8-hr	18	1051		1051	1051	1051	1027	997	866	479	449	418	389	345	320	296	275	256	215	183	158	140	112	98	87	77	70	59	45	24	12	10	8
8-hr	19	933		933	933	933	914	890	834	520	416	389	363	318	296	276	257	240	203	174	151	132	104	92	82	73	66	60	41	24	11	9	7
8-hr	20	835		835	835	835	820	801	778	629	373	352	330	297	278	259	242	226	193	166	144	126	98	87	77	70	63	57	38	23	9	8	7
8-hr	21	751		751	751	751	738	723	704	636	353	328	309	273	251	236	221	207	178	154	134	118	97	80	72	65	59	54	37	23	8	7	6
8-hr	22	684		684	684	684	674	661	646	608	433	308	291	259	234	220	207	195	168	146	128	113	92	76	68	61	56	51	34	22	7	6	6
8-hr	23	617		617	617	617	617	606	593	578	499	283	269	241	220	208	196	185	160	140	123	109	87	72	65	59	53	49	31	21	7	5	5
8-hr	24	569		569	569	569	569	560	549	536	472	300	252	227	204	191	180	171	149	131	115	103	83	67	60	55	50	46	29	20	7	5	4
8-hr	25	525		525	525	525	525	517	507	497	469	364	239	217	195	179	170	161	141	124	110	98	80	68	57	52	48	44	27	19	6	4	4
8-hr	26	485		485	485	485	485	478	470	461	450	405	225	202	183	170	162	153	135	119	106	95	77	65	55	50	46	42	26	18	7	4	3
8-hr	27	449		449	449	449	449	444	437	429	420	378	265	191	174	158	150	143	126	112	100	90	73	61	51	47	43	40	28	17	7	4	3
8-hr	28	417		417	417	417	417	412	406	399	392	371	306	183	167	152	142	136	120	107	96	86	71	59	49	45	41	38	27	16	7	4	3
8-hr	29	388		388	388	388	388	384	379	373	367	359	299	170	157	143	135	129	115	103	92	83	69	58	51	43	40	37	26	15	8	3	3
8-hr	30	359		359	359	359	359	359	355	350	344	337	309	163	150	138	126	121	108	97	87	79	65	55	48	41	38	35	25	15	8	3	3
8-hr	31	336		336	336	336	336	336	332	328	323	317	301	158	144	132	121	116	104	94	85	77	64	54	46	39	37	34	24	14	8	3	2
8-hr	32	316		316	316	316	316	316	312	308	304	299	293	178	135	125	115	109	99	89	80	73	61	52	44	37	35	32	23	14	8	3	2
8-hr	33	297		297	297	297	297	297	294	290	286	282	277	204	130	121	111	104	94	85	77	70	59	50	43	39	33	31	23	13	8	3	2
8-hr	34	280		280	280	280	280	280	277	274	271	267	262	223	125	116	107	100	91	82	75	68	57	49	42	37	32	30	22	13	8	3	2
8-hr	35	265		265	265	265	265	265	262	259	256	253	249	215	119	111	103	96	86	78	71	65	55	47	40	36	31	29	21	12	7	3	2
8-hr	36	250		250	250	250	250	250	248	246	243	240	236	207	116	106	99	92	82	75	69	63	53	46	39	34	30	28	20	12	7	3	2
8-hr	37	235		235	235	235	235	235	235	233	230	227	224	210	129	102	95	89	79	72	66	61	52	44	38	34	31	27	20	11	7	3	2
8-hr	38	223		223	223	223	223	223	223	221	219	216	213	207	146	98	92	86	76	70	64	59	50	43	38	33	30	26	19	11	7	4	2
8-hr	39	212		212	212	212	212	212	212	210	208	206	203	197	159	94	88	83	72	67	61	56	48	42	36	32	29	25	19	11	7	4	2
8-hr	40	202		202	202	202	202	202	202	200	198	196	194	188	170	91	85	80	70	64	59	55	47	40	35	31	28	24	18	10	7	4	2
8-hr	41	192		192	192	192	192	192	192	191	189	187	185	180	162	89	82	78	67	62	57	53	45	39	34	30	27	25	17	10	7	4	2
8-hr	42	183		183	183	183	183	183	183	182	180	178	177	172	154	97	79	74	65	60	55	51	44	38	34	30	26	24	17	10	6	4	2
8-hr	43	175		175	175	175	175	175	175	174	172	171	169	165	156	109	77	72	62	58	54	50	43	37	33	29	26	23	17	10	6	4	2
8-hr	44	166		166	166	166	166	166	166	166	165	163	162	158	154	119	74	70	60	55	51	48	41	36	32	28	25	23	16	10	6	4	2
8-hr	45	159		159	159	159	159	159	159	159	158	156	155	151	148	126	71	67	58	54	50	46	40	35	31	27	25	22	16	10	6	4	2
8-hr	46	152		152	152	152	152	152	152	152	151	150	148	145	142	120	70	65	57	52	48	45	39	34	30	27	24	22	15	10	6	4	2
8-hr	47	146		146	146	146	146	146	146	146	145	144	142	140	136	120	76	63	55	50	46	43	38	33	29	26	23	21	15	10	5	4	2
8-hr	48	140		140	140	140	140	140	140	140	139	138	137	134	131	119	84	62	54	48	45	42	37	32	29	26	23	21	14	10	5	4	2
8-hr	49	134		134	134	134	134	134	134	134	134	133	132	129	126	120	91	59	52	47	44	41	36	31	28	25	22	20	14	9	5	4	2
8-hr	50	129		129	129	129	129	129	129	129	128	128	127	124	122	119	97	58	51	45	42	40	35	31	27	24	22	20	14	9	5	4	2
8-hr	51	124		124	124	124	124	124	124	124	124	123	122	120	117	115	103	57	50	44	41	39	34	30	27	24	22	19	13	9	5	4	2
8-hr	52	119		119	119	119	119	119	119	119	119	118	117	115	113	111	97	61	48	42	40	37	33	29	26	23	21	19	13	9	5	4	2
8-hr	53	115		115	115	115	115	115	115	115	115	114	113	111	109	107	96	67	47	41	39	36	32	28	25	23	21	19	13	9	5	4	2
8-hr	54	110		110	110	110	110	110	110	110	110	110	109	107	106	103	95	73	46	41	38	35	31	28	25	22	20	18	12	8	5	3	2
8-hr	55	107		107	107	107	107	107	107	107	107	106	105	104	102	100	95	77	45	40	37	34	31	27	24	22	20	18	12	8	4	3	2
8-hr	56	103		103	103	103	103	103	103	103	103	102	102	100	99	97	94	81	43	39	35	33	30	27	24	21	19	18	12	8	4	3	2
8-hr	57	99		99	99	99	99	99	99	99	99	99	98	97	95	94	92	76	42	38	34	32	29	26	23	21	19	17	11	8	4	3	2
8-hr	58	96		96	96	96	96	96	96	96	96	96	95	94	92	91	89	80	41	37	33	32	28	25	23	20	19	17	11	8	4	3	2
8-hr	59	92		92	92	92	92	92	92	92	92	92	92	91	89	88	86	79	40	36	33	31	28	25	22	20	18	17	11	8	4	3	2
8-hr	60	89		89	89	89	89	89	89	89	89	89	89	88	87	85	84	78	39	35	32	30	27	24	22	20	18	16	11	7	4	3	2
8-hr	61	87		87	87	87	87	87	87	87	87	87	86	85	84	83	81	77	38	34	31	29	26	24	21	19	18	16	11	7	4	3	2
8-hr	62	84		84	84	84	84	84	84	84	84	84	83	83	81	80	79	77	37	34	30	29	26	23	21	19	17	16	11	7	4	3	2
8-hr	63	81		81	81	81	81	81	81	81	81	81	81	80	79	78	76	75	37	33	30	28	25	23	20	19	17	15	11	7	4	3	2
8-hr	64	79		79	79	79	79	79	79	79	79	79	79	78	77	76	74	73	37	32	29	27	24	22	20	18	17	15	10	7	4	3	2
8-hr	65	76		76	76	76	76	76	76	76	76	76	76	75	74	73	72	71	40	32	29	26	24	22	20	18	16	15	10	7	3	3	2
8-hr	66	74		74	74	74	74	74	74	74	74	74	74	73	72	71	70	69	43	31	28	26	23	21	19	17	16	15	10	7	3	3	2
8-hr	67	72		72	72	72	72	72	72	72	72	72	72	71	70	69	68	67	46	30	27	25	23	21	19	17	16	14	10	6	3	3	2
8-hr	68	70		70	70	70	70	70	70	70	70	70	70	69	68	68	67	65	49	30	27	25	22	20	18	17	15	14	10	6	3	3	2
8-hr	69	68		68	68	68	68	68	68	68	68	68	68	67	67	66	65	64	51	29	26	24	22	20	18	17	15	14	10	6	3	3	2
8-hr	70	66		66	66	66	66	66	66	66	66	66	66	65	65	64	63	62	53	28	26	24	21	19	18	16	15	14	9	6	3	3	2
8-hr	71	64		64	64	64	64	64	64	64	64	64	64	64	63	62	61	60	49	28	25	23	21	19	17	16	15	14	9	6	3	3	2
8-hr	72	62		62	62	62	62	62	62	62	62	62	62	62	61	61	60	59	51	27	25	23	20	19	17	16	14	13	9	6	3	3	2
8-hr	73	60		60	60	60	60	60	60	60	60	60	60	60	60	60	59	58	57	50	27	25	22	20	18	17	15	14	13	9	6	3	2	2
8-hr	74	59		59	59	59	59	59	59	59	59	59	59	59	59	58	58	57	56	49	26	24	22	20	18	16	15	14	13	9	6	3	2	2
8-hr	75	57		57	57	57	57	57	57	57	57	57	57	57	57	56	55	55	55	50	26	23	22	19	17	16	15	14	13	9	6	3	2	2
8-hr	76	56		56	56	56	56	56	56	56	56	56	56	56	55	55	54	53	50	26	23	21	19	17	16	15	13	12	9	6	3	2	2
8-hr	77	54		54	54	54	54	54	54	54	54	54	54	54	54	53	53	52	50	27	23	21	18	17	15	14	13	12	9	5	3	2	2
8-hr	78	53		53	53	53	53	53	53	53	53	53	53	53	53	52	51	51	49	28	22	20	18	17	15	14	13	12	8	5	3	2	2
8-hr	79	52		52	52	52	52	52	52	52	52	52	52	52	51	51	50	50	48	30	22	20	18	16	15	14	13	12	8	5	3	2	2
8-hr	80	51		51	51	51	51	51	51	51	51	51	51	51	50	50	49	49	47	32	22	20	17	16	15	14	13	12	8	5	3	2	2
8-hr	81	49		49	49	49	49	49	49	49	49	49	49	49	49	48	48	47	46	33	21	19	17	16	14	13	12	11	8	5	3	2	2
8-hr	82	48		48	48	48	48	48	48	48	48	48	48	48	48	47	47	46	45	35	21	19	17	15	14	13	12	11	8	5	3	2	2
8-hr	83	47		47	47	47	47	47	47	47	47	47	47	47	47	46	46	45	44	36	20	19	16	15	14	13	12	11	8	5	3	2	2
8-hr	84	46		46	46	46	46	46	46	46	46	46	46	46	46	45	45	44	43	37	20	18	16	15	14	13	12	11	8	5	2	2	2
8-hr	85	45		45	45	45	45	45	45	45	45	45	45	45	45	44	44	43	42	34	20	18	16	15	14	13	12	11	8	5	2	2	2
8-hr	86	44		44	44	44	44	44	44	44	44	44	44	44	44	43	43	42	41	35	19	18	15	14	13	12	11	11	8	5	2	2	2
8-hr	87	43		43	43	43	43	43	43	43	43	43	43	43	43	42	42	41	40	35	19	18	15	14	13	12	11	10	8	5	3	2	2
8-hr	88	42		42	42	42	42	42	42	42	42	42	42	42	42	41	41	41	39	36	19	17	15	14	13	12	11	10	7	5	3	2	2

No inputs on this page

AveTime	StackHt(m)	Max	distance(m)=	10	20	30	40	50	60	70	80	90	100	120	140	160	180	200	250	300	350	400	500	600	700	800	900	1000	1500	2500	5000	7500	10000
8-hr	89	41		41	41	41	41	41	41	41	41	41	41	41	41	40	40	40	39	35	19	17	15	14	13	12	11	10	7	4	3	2	2
8-hr	90	40		40	40	40	40	40	40	40	40	40	40	40	40	40	39	39	38	35	20	17	15	13	12	12	11	10	7	4	3	2	2
8-hr	91	39		39	39	39	39	39	39	39	39	39	39	39	39	39	38	38	37	35	21	17	14	13	12	11	11	10	7	4	3	2	2
8-hr	92	38		38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	37	36	35	22	16	14	13	12	11	10	10	7	4	2	2	2
8-hr	93	37		37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	36	36	34	23	16	14	13	12	11	10	10	7	4	2	2	2
8-hr	94	37		37	37	37	37	37	37	37	37	37	37	37	37	36	36	36	35	34	24	16	14	12	12	11	10	9	7	4	2	2	2	2
8-hr	95	36		36	36	36	36	36	36	36	36	36	36	36	36	36	35	35	34	33	25	16	14	12	11	11	10	9	7	4	2	2	2	1
8-hr	96	35		35	35	35	35	35	35	35	35	35	35	35	35	35	35	34	33	32	26	15	13	12	11	10	10	9	7	4	2	2	2	1
8-hr	97	34		34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	33	32	27	15	13	12	11	10	10	9	7	4	2	2	2	1
8-hr	98	34		34	34	34	34	34	34	34	34	34	34	34	34	33	33	33	33	32	31	27	15	13	12	11	10	10	9	7	4	2	2	1
8-hr	99	33		33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	32	32	31	25	15	13	11	11	10	9	9	7	4	2	2	1
AveTime	StackHt(m)	Max	distance(m)=	10	20	30	40	50	60	70	80	90	100	120	140	160	180	200	250	300	350	400	500	600	700	800	900	1000	1500	2500	5000	7500	10000
24-hr	1	33894		33894	21199	15282	11023	8810	7500	6420	5543	4832	4251	3369	2745	2286	1939	1675	1219	933	741	605	429	322	252	203	168	141	73	34	12	7	4
24-hr	2	21130		21130	13134	9742	6826	5048	4017	3375	2921	2565	2272	1832	1635	1457	1302	1168	909	727	598	503	371	287	230	188	158	134	71	31	11	6	4
24-hr	3	16798		16798	11281	7860	5759	4356	3471	2874	2385	1950	1704	1338	1133	978	855	754	620	531	458	397	307	246	202	169	144	124	68	31	10	5	4
24-hr	4	28306		28306	7822	5374	4099	3284	2710	2268	1819	1652	1504	1262	1000	846	699	605	473	383	332	298	244	203	172	147	128	112	65	30	10	5	3
24-hr	5	21068		21068	5837	4333	3160	2462	2012	1682	1396	1240	1057	907	800	717	600	543	413	332	274	235	190	162	141	124	110	98	60	29	10	5	3
24-hr	6	12894		12894	4279	3234	2499	1929	1585	1341	1161	989	879	700	597	538	491	452	346	286	242	208	154	128	111	99	89	82	54	28	10	6	3
24-hr	7	8402		8402	6195	2405	1904	1470	1208	1011	870	764	678	536	460	418	385	354	272	235	203	178	139	108	91	79	71	65	47	27	10	6	4
24-hr	8	5719		5719	5122	1835	1515	1246	1001	839	709	612	547	451	370	316	291	272	230	183	167	152	123	96	79	67	60	54	38	24	10	6	4
24-hr	9	3957		3957	3699	1911	1247	1047	882	715	619	530	464	376	317	268	240	224	191	167	139	130	112	95	76	64	56	49	32	21	9	6	4
24-hr	10	2879		2879	2861	2249	1047	898	767	659	543	478	416	332	276	234	205	185	159	140	125	105	94	83	68	59	52	45	28	18	9	5	4
24-hr	11	2258		2258	2258	2108	875	761	661	576	504	422	377	300	247	211	178	161	134	119	106	96	77	71	64	53	47	42	26	16	8	5	3
24-hr	12	1814		1814	1814	1684	1105	653	572	502	443	393	332	265	219	187	163	145	116	102	92	83	66	60	56	51	43	39	24	14	7	5	3
24-hr	13	1503		1503	1503	1406	1130	569	501	443	394	351	302	245	201	170	148	132	106	91	80	73	58	50	47	44	41	35	22	13	7	4	3
24-hr	14	1267		1267	1267	1190	1115	563	445	395	353	317	286	223	183	158	136	120	95	79	69	64	54	45	41	39	36	32	21	11	6	4	3
24-hr	15	1077		1077	1077	1019	961	637	392	351	315	283	257	204	170	143	123	109	89	74	65	57	49	41	36	33	32	30	19	10	6	4	3
24-hr	16	926		926	926	889	841	686	356	320	288	260	236	197	158	132	116	101	83	70	60	51	44	39	33	30	28	27	18	9	5	4	3
24-hr	17	795		795	795	779	741	690	409	293	265	240	218	183	146	127	108	95	78	66	57	51	41	36	31	28	25	24	17	8	5	4	3
24-hr	18	688		688	688	688	654	622	444	262	239	217	198	167	142	116	99	88	72	61	53	47	37	33	29	26	23	21	16	8	4	3	3
24-hr	19	610		610	610	610	582	555	457	251	221	202	185	156	134	109	96	83	68	58	50	44	35	31	27	24	22	20	14	8	4	3	2
24-hr	20	544		544	544	544	520	498	455	302	202	186	171	145	125	103	89	77	64	55	48	42	33	29	26	23	21	19	13	8	3	3	2
24-hr	21	486		486	486	486	467	448	433	318	186	172	158	135	116	101	84	75	59	51	45	39	32	27	24	22	20	18	13	8	3	2	2
24-hr	22	439		439	439	439	424	407	391	324	200	162	149	128	111	97	81	71	56	49	43	38	31	25	23	20	19	17	12	7	3	2	2
24-hr	23	397		397	397	397	386	371	357	323	231	148	138	119	103	91	80	67	53	47	41	36	29	24	22	20	18	16	11	7	3	2	2
24-hr	24	359		359	359	359	352	339	327	316	242	143	130	112	98	86	76	65	50	44	38	34	28	22	20	18	17	15	10	7	3	2	2
24-hr	25	324		324	324	324	323	311	301	290	241	162	122	106	93	82	72	62	47	41	37	33	27	23	19	17	16	15	10	6	2	2	1
24-hr	26	296		296	296	296	296	286	277	267	239	181	114	100	88	77	69	62	45	40	35	32	26	22	18	17	15	14	9	6	2	2	1
24-hr	27	273		273	273	273	273	264	255	247	238	185	118	94	83	73	65	59	43	37	33	30	24	20	17	16	14	13	9	6	2	2	1
24-hr	28	251		251	251	251	251	244	236	229	221	185	135	90	79	70	63	56	42	36	32	29	24	20	16	15	14	13	9	5	2	1	1
24-hr	29	232		232	232	232	232	226	219	212	205	186	137	84	75	67	59	54	40	34	31	28	23	19	17	14	13	12	9	6	3	1	1
24-hr	30	214		214	214	214	214	209	203	197	191	184	147	79	71	63	57	51	39	32	29	26	22	18	16	14	13	12	8	5	3	1	1
24-hr	31	197		197	197	197	197	195	189	183	179	175	145	76	68	61	54	49	37	31	28	26	21	18	15	13	12	11	8	5	3	1	1
24-hr	32	184		184	184	184	184	182	177	172	168	163	146	78	65	58	52	47	38	30	27	24	20	17	15	12	12	11	8	5	3	1	1
24-hr	33	171		171	171	171	171	171	166	162	158	153	147	89	62	56	50	46	36	28	26	23	20	17	14	13	11	10	8	5	3	1	1
24-hr	34	161		161	161	161	161	160	156	152	148	144	141	97	59	54	48	44	35	27	25	23	19	16	14	12	11	10	7	5	3	1	1
24-hr	35	151		151	151	151	151	150	147	143	139	136	133	95	57	51	47	42	34	26	24	22	18	16	13	12	10	10	7	4	2	1	1
24-hr	36	142		142	142	142	142	141	139	135	132	129	125	96	54	49	45	41	33	26	23	21	18	15	13	11	10	9	7	4	2	1	1
24-hr	37	134		134	134	134	134	133	131	128	125	122	119	98	56	47	43	39	32	25	22	20	17	15	13	11	10	9	7	4	2	1	1
24-hr	38	126		126	126	126	126	126	124	121	118	115	113	98	63	46	42	38	31	25	21	20	17	14	13	11	10	9	6	4	2	1	1
24-hr	39	120		120	120	120	120	120	117	114	112	109	107	98	68	44	40	37	30	25	20	19	16	14	12	11	10	8	6	4	2	1	1
24-hr	40	114		114	114	114	114	114	111	109	106	104	102	97	73	42	39	35	29	24	20	18	16	13	12	10	9	8	6	4	2	1	1
24-hr	41	108		108	108	108	108	108	105	103	101	98	97	93	69	41	37	34	28	23	19	18	15	13	11	10	9	8	6	4	2	1	1
24-hr	42	103		103	103	103	103	103	101	98	96	94	92	88	70	41	36	33	27	23	18	17	15	13	11	10	9	8	6	4	2	1	1
24-hr	43	98		98	98	98	98	98	96	93	92	90	88	84	70	46	35	32	26	22	18	17	14	12	11	10	9	8	6	3	2	1	1
24-hr	44	94		94	94	94	94	94	92	89	87	86	84	81	70	50	34	31	26	21	18	16	14	12	11	9	8	8	5	3	2	1	1
24-hr	45	89		89	89	89	89	89	88	86	84	82	80	77	70	54	32	30	25	21	18	15	13	12	10	9	8	7	5	3	2	1	1
24-hr	46	85		85	85	85	85	85	85	82	80	78	77	74	70	52	32	29	24	20	17	15	13	11	10	9	8	7	5	3	2	1	1
24-hr	47	81		81	81	81	81	81	81	79	76	75	73	71	68	53	32	28	24	20	17	14	13	11	10	9	8	7	5	3	2	1	1
24-hr	48	78		78	78	78	78	78	78	76	73	72	70	68	65	53	36	27	23	19	17	14	12	11	10	9	8	7	5	3	2	1	1
24-hr	49	75		75	75	75	75	75	75	73	71	69	68	65	63	53	38	27	22	19	16	14	12	10	9	8	7	7	5	3	2	1	1
24-hr	50	72		72	72	72	72	72	72	70	68	66	65	63	60	53	41	26	22	19	16	14	12	10	9	8	7	7	5	3	2	1	1
24-hr	51	69		69	69	69	69	69	69	68	66	63	62	60	58	52	43	26	21	18	15	13	11	10	9	8	7	6	4	3	2	1	1
24-hr	52	66		66	66	66	66	66	66	65	64	61	60	58	56	53	40	26	21	18	15	13	11	10	9	8	7	6	4	3	2	1	1
24-hr	53	64		64	64	64	64	64	64	63	61	59	58	56	54	52	41	28	20	17	15	13	11	9	8	8	7	6	4	3	2	1	1
24-hr	54	61		61	61	61	61	61	61	61	59	58	56	54	52	51	42	30	20	17	14	13	10	9	8	7	7	6	4	3	2	1	1
24-hr	55	59		59	59	59	59	59	59	59	57	56	54	52	50	49	41	32	19	16	14	12	10	9	8	7	7	6	4	3	1	1	1
24-hr	56	56		56	56	56	56	56	56	56	55	54	52	50	49	47	42	34	19	16	14	12	10	9	8	7	6	6	4	3	1	1	1
24-hr	57	55		55	55	55	55	55	55	54	52	50	49	47	46	41	33	18	16	14	12	10	9	8	7	6	6	4	3	1	1	1	1
24-hr	58	53		53	53	53	53	53	53	52	51	48	47	45	44	41	33	18	15	13	12	9	8	8	7	6	6	4	3	1	1	1	1
24-hr	59	51		51	51	51	51	51	51	50	49	48	45	44	43	41	33	17	15	13	11	9	8	7	7	6	6	4	3	1	1	1	1
24-hr	60	49		49	49	49	49	49	49	49	48	46	44	43	41	40	34	17	15	13	11	9	8	7	7	6	5	4	2	1	1	1	1
24-hr	61	48		48	48	48	48	48	48	47	46	45	42	41	40	39	33	17	14	13	11	9	8	7	6	6	5	4	2	1	1	1	1
24-hr	62	46		46	46	46	46	46	46	46	45	44	41	40	39	38	33	16	14	12	11	9	8	7	6	6	5	4	2	1	1	1	1
24-hr	63	44		44	44	44	44	44	44	44	44	43	42	40	39	38	37	33	16	14	12	11	8	8	7	6	6	5	4	2	1	1	1
24-hr	64	43		43	43	43	43	43	43	43	43	42	41	39	38	37	36	33	16	14	12	10	8	7	7	6	6	5	3	2	1	1	1
24-hr	65	42		42	42	42	42	42	42	42	42	41	40	38	36	36	35	33	17	13	12	10	8	7	7	6	5	5	3	2	1	1	1
24-hr	66	40		40	40	40	40	40	40	40	40	40	39	37	35	34	34	33	18	13	11	10	8	7	6	6	5	5	3	2	1	1	1
24-hr	67	39		39	39	39	39	39	39	39	39	39	38	36	34	33	33	32	19	13	11	10	8	7	6	6	5	5	3	2	1	1	1
24-hr	68	38		38	38	38	38	38	38	38	38	38	37	35	33	33	32	31	20	12	11	10	8	7	6	6	5	5	3	2	1	1	1
24-hr	69	37		37	37	37	37	37	37	37	37	37	36	34	32	32	31	30	21	12	11	10	8	7	6	6	5	5	3	2	1	1	1
24-hr	70	36		36	36	36	36	36	36	36	36	36	35	33	32	31	30	29	22	12	11	9	8	6	6	5	5	5	3	2	1	1	1
24-hr	71	35		35	35	35	35	35	35	35	35	35	34	33	31	30	29	28	21	12	10	9	7	6	6	5	5	5	3	2	1	1	1
24-hr	72	34		34	34	34	34	34	34	34	34	34	33	32	30	29	29	28	21	12	10	9	7	6	6	5	5	4	3	2	1	1	1
24-hr	73	33		33	33	33	33	33	33	33	33	33	32	31	29	28	28	27	21	11	10	9	7	6	6	5	5	4	3	2	1	1	1
24-hr	74	32		32	32	32	32	32	32	32	32	32	31	30	28	28	27	26	21	11	10	9	7	6	5	5	5	4	3	2	1	1	1
24-hr	75	31		31	31	31	31	31	31	31	31	31	31	30	28	27	26	26	21	11	10	9	7	6	5	5	5	4	3	2	1	1	1
24-hr	76	30		30	30	30	30	30	30	30	30	30	30	29	27	26	26	25	21	11	10	9	7	6	5	5	4	4	3	2	1	1	1
24-hr	77	29		29	29	29	29	29	29	29	29	29	29	28	27	26	25	25	21	11	9	8	7	6	5	5	4	4	3	2	1	1	1
24-hr	78	29		29	29	29	29	29	29	29	29	29	28	28	26	25	24	24	21	12	9	8	7	6	5	5	4	4	3	2	1	1	1
24-hr	79	28		28	28	28	28	28	28	28	28	28	28	27	25	24	24	23	21	12	9	8	7	6	5	5	4	4	3	2	1	1	1
24-hr	80	27		27	27	27	27	27	27	27	27	27	27	26	25	24	23	23	21	13	9	8	7	5	5	5	4	4	3	2	1	1	1
24-hr	81	26		26	26	26	26	26	26	26	26	26	26	26	24	23	23	22	21	14	9	8	6	5	5	4	4	4	3	2	1	1	1
24-hr	82	26		26	26	26	26	26	26	26	26	26	26	25	24	23	22	22	21	14	9	8	6	5	5	4	4	4	3	2	1	1	1
24-hr	83	25		25	25	25	25	25	25	25	25	25	25	25	24	22	22	21	20	15	9	8	6	5	5	4	4	4	3	2	1	1	1
24-hr	84	25		25	25	25	25	25	25	25	25	25	25	24	23	22	21	21	20	15	8	8	6	5	5	4	4	4	3	2	1	1	1

No inputs on this page

AveTime	StackHt(m)	Max	distance(m)=	10	20	30	40	50	60	70	80	90	100	120	140	160	180	200	250	300	350	400	500	600	700	800	900	1000	1500	2500	5000	7500	10000
24-hr	85	24		24	24	24	24	24	24	24	24	24	24	23	23	21	21	20	19	14	8	7	6	5	5	4	4	4	4	3	2	1	1	1
24-hr	86	23		23	23	23	23	23	23	23	23	23	23	23	22	21	20	20	19	14	8	7	6	5	4	4	4	4	3	2	1	1	1	1
24-hr	87	23		23	23	23	23	23	23	23	23	23	23	22	22	21	20	19	18	14	8	7	6	5	4	4	4	3	3	2	1	1	1	1
24-hr	88	22		22	22	22	22	22	22	22	22	22	22	22	21	20	20	19	18	14	8	7	6	5	4	4	4	3	2	2	1	1	1	1
24-hr	89	22		22	22	22	22	22	22	22	22	22	22	22	21	20	19	19	18	15	8	7	6	5	4	4	4	3	2	1	1	1	1	1
24-hr	90	21		21	21	21	21	21	21	21	21	21	21	21	21	20	19	19	18	17	15	8	7	6	5	4	4	4	3	2	1	1	1	1
24-hr	91	21		21	21	21	21	21	21	21	21	21	21	21	21	20	19	18	18	17	15	9	7	6	5	4	4	4	3	2	1	1	1	1
24-hr	92	20		20	20	20	20	20	20	20	20	20	20	20	20	20	19	18	18	17	15	9	7	6	5	4	4	3	3	2	1	1	1	1
24-hr	93	20		20	20	20	20	20	20	20	20	20	20	20	20	19	18	18	17	16	15	9	7	6	5	4	4	3	3	2	1	1	1	1
24-hr	94	19		19	19	19	19	19	19	19	19	19	19	19	19	18	17	17	16	14	10	7	6	5	4	4	3	3	2	1	1	1	1	1
24-hr	95	19		19	19	19	19	19	19	19	19	19	19	19	19	18	17	17	16	14	10	6	6	5	4	4	3	3	2	1	1	1	1	0
24-hr	96	19		19	19	19	19	19	19	19	19	19	19	19	18	18	17	16	15	14	11	6	5	5	4	3	3	3	2	1	1	1	1	0
24-hr	97	18		18	18	18	18	18	18	18	18	18	18	18	18	17	16	16	15	14	11	6	5	5	4	3	3	3	2	1	1	1	1	0
24-hr	98	18		18	18	18	18	18	18	18	18	18	18	18	17	17	16	16	15	14	11	6	5	4	4	3	3	3	2	1	1	1	1	0
24-hr	99	17		17	17	17	17	17	17	17	17	17	17	17	17	17	16	15	15	14	11	6	5	4	4	3	3	3	2	1	1	1	1	0
AveTime	StackHt(m)	Max	distance(m)=	10	20	30	40	50	60	70	80	90	100	120	140	160	180	200	250	300	350	400	500	600	700	800	900	1000	1500	2500	5000	7500	10000
monthly	1	6888		6888	3626	2381	1744	1401	1142	945	795	679	587	453	361	296	247	210	149	112	87	71	49	37	29	23	19	16	8	4	1	1	0
monthly	2	3743		3743	2656	1694	1083	776	598	486	423	373	343	292	250	216	188	165	123	96	77	63	45	34	27	22	18	15	8	3	1	1	0
monthly	3	3592		3592	1971	1235	884	674	526	420	345	284	244	189	158	140	127	117	94	77	64	54	40	31	25	20	17	15	8	3	1	1	0
monthly	4	7295		7295	1406	934	649	482	379	314	267	232	204	165	133	114	98	88	70	59	51	44	34	28	23	19	16	14	7	3	1	1	0
monthly	5	5349		5349	1148	723	525	391	303	241	200	170	151	123	104	90	77	70	55	47	41	35	29	24	20	17	14	13	7	3	1	1	0
monthly	6	3703		3703	990	597	422	328	256	210	173	145	125	97	82	70	64	58	44	36	31	28	22	19	16	14	13	11	7	3	1	1	0
monthly	7	2594		2594	1430	495	348	270	217	176	147	126	109	84	68	58	53	47	37	31	25	22	18	15	13	12	11	9	6	3	1	1	0
monthly	8	1844		1844	1186	409	290	224	182	149	127	107	93	71	58	48	41	38	31	26	22	19	15	12	10	9	9	8	5	3	1	1	0
monthly	9	1333		1333	912	452	257	194	158	133	112	97	83	65	52	43	37	32	27	23	19	17	13	11	9	8	7	6	5	3	1	1	0
monthly	10	1033		1033	762	502	225	173	138	116	101	86	75	59	48	40	34	29	23	20	17	15	12	10	8	7	6	5	4	2	1	1	0
monthly	11	812		812	639	464	203	152	121	101	87	76	67	52	43	36	31	27	20	17	15	14	11	9	8	6	6	5	3	2	1	1	0
monthly	12	647		647	538	401	249	134	109	91	78	69	60	48	39	33	28	24	18	15	13	12	10	8	7	6	5	5	3	2	1	1	0
monthly	13	530		530	462	349	249	119	99	82	70	62	55	44	35	30	26	23	17	13	12	10	8	7	6	5	5	4	3	2	1	0	0
monthly	14	445		445	403	313	242	123	87	73	63	55	49	40	33	27	23	20	16	12	10	10	8	7	6	5	4	4	2	1	1	0	0
monthly	15	378		378	351	281	224	152	78	67	57	50	44	37	30	26	22	19	14	11	9	8	7	6	5	5	4	4	2	1	1	0	0
monthly	16	328		328	309	254	204	153	77	61	53	46	41	34	28	24	20	18	13	11	9	8	6	6	5	4	4	3	2	1	1	0	0
monthly	17	287		287	273	229	186	151	91	57	50	43	38	32	27	22	19	17	12	10	8	7	6	5	4	4	4	3	2	1	1	0	0
monthly	18	252		252	241	209	172	144	101	54	45	40	36	30	25	21	18	15	12	9	8	7	5	5	4	4	3	3	2	1	0	0	0
monthly	19	223		223	214	189	158	133	102	56	42	38	34	28	23	20	17	15	11	9	7	6	5	4	4	3	3	3	2	1	0	0	0
monthly	20	198		198	190	172	145	122	101	69	40	35	32	26	22	19	16	14	10	8	7	6	4	4	3	3	3	3	2	1	0	0	0
monthly	21	177		177	170	157	134	113	96	71	40	33	30	25	21	18	15	14	10	8	6	6	4	4	3	3	3	2	2	1	0	0	0
monthly	22	160		160	153	143	124	106	92	73	46	31	28	23	20	17	15	13	10	8	6	5	4	3	3	3	2	2	2	1	0	0	0
monthly	23	146		146	138	131	115	99	86	72	54	31	27	22	19	16	14	13	10	7	6	5	4	3	3	3	2	2	1	1	0	0	0
monthly	24	133		133	126	120	107	93	81	69	53	31	25	21	18	16	13	12	9	7	6	5	4	3	3	2	2	2	1	1	0	0	0
monthly	25	121		121	115	110	99	87	76	67	54	38	24	20	17	15	13	11	9	7	6	5	3	3	2	2	2	2	1	1	0	0	0
monthly	26	111		111	106	101	92	81	71	63	53	41	24	19	16	14	13	11	8	7	5	4	3	3	2	2	2	2	1	1	0	0	0
monthly	27	102		102	98	93	86	76	67	60	52	41	27	18	16	14	12	11	8	6	5	4	3	3	2	2	2	2	1	1	0	0	0
monthly	28	94		94	91	86	80	71	64	56	50	41	31	17	15	13	11	10	8	6	5	4	3	2	2	2	2	2	1	1	0	0	0
monthly	29	87		87	84	79	75	67	60	53	48	41	32	17	14	12	11	10	8	6	5	4	3	2	2	2	2	2	1	1	1	0	0
monthly	30	81		81	78	73	70	63	56	50	46	40	32	16	14	12	11	9	7	6	5	4	3	2	2	2	2	2	1	1	1	0	0
monthly	31	75		75	73	68	65	60	54	48	43	38	33	16	13	12	10	9	7	6	5	4	3	2	2	2	2	2	1	1	1	0	0
monthly	32	70		70	68	64	61	56	51	46	41	38	32	17	13	11	10	9	7	6	5	4	3	2	2	2	1	1	1	1	0	0	0
monthly	33	66		66	64	61	57	53	48	44	39	36	31	20	12	11	9	8	7	5	4	4	3	2	2	1	1	1	1	1	0	0	0
monthly	34	61		61	60	57	54	50	46	41	37	34	30	22	12	10	9	8	6	5	4	4	3	2	2	1	1	1	1	1	0	0	0
monthly	35	58		58	57	54	50	47	44	39	36	33	30	22	12	10	9	8	6	5	4	3	3	2	2	1	1	1	1	1	0	0	0
monthly	36	54		54	53	51	47	45	41	38	34	31	29	22	12	10	9	8	6	5	4	3	2	2	2	1	1	1	1	1	0	0	0
monthly	37	51		51	50	48	45	42	39	36	33	30	28	22	12	9	8	8	6	5	4	3	2	2	2	1	1	1	1	0	0	0	0
monthly	38	48		48	47	46	43	40	37	34	32	29	27	21	14	9	8	7	6	5	4	3	2	2	1	1	1	1	1	0	0	0	0
monthly	39	45		45	45	43	41	38	36	33	30	28	26	21	15	9	8	7	6	4	4	3	2	2	1	1	1	1	1	0	0	0	0
monthly	40	43		43	42	41	39	36	34	32	29	27	24	20	15	9	7	7	5	4	4	3	2	2	1	1	1	1	1	0	0	0	0
monthly	41	41		41	40	39	37	35	32	30	28	26	24	20	15	9	7	7	5	4	4	3	2	2	1	1	1	1	1	0	0	0	0
monthly	42	39		39	38	37	35	33	31	29	27	25	23	20	15	9	7	6	5	4	3	3	2	2	1	1	1	1	1	0	0	0	0
monthly	43	37		37	36	35	34	32	30	28	26	24	22	19	16	10	7	6	5	4	3	3	2	2	1	1	1	1	1	0	0	0	0
monthly	44	35		35	35	34	32	30	28	27	25	23	21	18	15	11	7	6	5	4	3	3	2	2	1	1	1	1	1	0	0	0	0
monthly	45	33		33	33	32	31	29	27	25	24	22	20	18	15	12	7	6	5	4	3	3	2	2	1	1	1	1	1	0	0	0	0
monthly	46	32		32	31	31	30	28	26	25	23	21	20	17	15	12	7	6	5	4	3	3	2	2	1	1	1	1	1	0	0	0	0
monthly	47	30		30	30	29	28	27	25	24	22	21	19	17	14	12	7	6	4	4	3	3	2	2	1	1	1	1	1	0	0	0	0
monthly	48	29		29	29	28	27	26	24	23	21	20	18	16	14	12	8	5	4	4	3	3	2	2	1	1	1	1	1	0	0	0	0
monthly	49	28		28	27	27	26	25	23	22	20	19	18	16	14	12	8	5	4	4	3	3	2	1	1	1	1	1	1	0	0	0	0
monthly	50	26		26	26	26	25	24	23	21	20	18	17	15	13	12	9	5	4	3	3	3	2	1	1	1	1	1	1	0	0	0	0
monthly	51	25		25	25	25	24	23	22	20	19	18	17	15	13	11	9	5	4	3	3	2	2	1	1	1	1	1	1	0	0	0	0
monthly	52	24		24	24	24	23	22	21	20	18	17	16	14	13	11	9	5	4	3	3	2	2	1	1	1	1	1	1	0	0	0	0
monthly	53	23		23	23	23	22	21	20	19	18	17	16	14	12	11	9	6	4	3	3	2	2	1	1	1	1	1	1	0	0	0	0
monthly	54	22		22	22	22	21	21	20	19	17	16	15	13	12	10	9	6	4	3	3	2	2	1	1	1	1	1	1	0	0	0	0
monthly	55	21		21	21	21	21	20	19	18	17	16	15	13	12	10	9	7	4	3	3	2	2	1	1	1	1	1	1	0	0	0	0
monthly	56	21		21	21	20	20	19	18	17	16	15	14	13	11	10	9	7	4	3	3	2	2	1	1	1	1	1	1	0	0	0	0
monthly	57	20		20	20	20	19	19	18	17	16	15	14	12	11	10	9	7	4	3	3	2	2	1	1	1	1	1	1	0	0	0	0
monthly	58	19		19	19	19	19	18	17	16	15	14	14	12	11	10	8	7	3	3	2	2	2	1	1	1	1	1	1	0	0	0	0
monthly	59	18		18	18	18	18	17	17	16	15	14	13	12	10	9	8	7	3	3	2	2	2	1	1	1	1	1	1	0	0	0	0
monthly	60	18		18	18	18	17	17	16	15	15	14	13	11	10	9	8	7	3	3	2	2	2	1	1	1	1	1	1	0	0	0	0
monthly	61	17		17	17	17	17	16	16	15	14	13	12	11	10	9	8	7	3	3	2	2	2	1	1	1	1	1	1	0	0	0	0
monthly	62	17		17	17	16	16	16	15	15	14	13	12	11	10	9	8	7	3	3	2	2	2	1	1	1	1	1	1	0	0	0	0
monthly	63	16		16	16	16	16	15	15	14	13	13	12	11	10	9	8	7	3	3	2	2	2	1	1	1	1	1	1	0	0	0	0
monthly	64	15		15	15	15	15	15	14	14	13	12	12	10	9	8	8	7	3	3	2	2	2	1	1	1	1	1	1	0	0	0	0
monthly	65	15		15	15	15	15	14	14	13	13	12	11	10	9	8	7	7	3	3	2	2	1	1	1	1	1	1	1	0	0	0	0
monthly	66	14		14	14	14	14	14	13	13	12	12	11	10	9	8	7	7	4	2	2	2	1	1	1	1	1	1	1	0	0	0	0
monthly	67	14		14	14	14	14	13	13	13	12	11	11	10	9	8	7	6	4	2	2	2	1	1	1	1	1	1	1	0	0	0	0
monthly	68	14		14	14	14	13	13	13	12	12	11	11	9	8	8	7	6	4	2	2	2	1	1	1	1	1	1	1	0	0	0	0
monthly	69	13		13	13	13	13	13	12	12	11	11	10	9	8	8	7	6	4	2	2	2	1	1	1	1	1	1	1	0	0	0	0
monthly	70	13		13	13	13	13	12	12	12	11	11	10	9	8	7	7	6	4	2	2	2	1	1	1	1	1	1	1	0	0	0	0
monthly	71	12		12	12	12	12	12	12	11	11	11	10	10	9	8	7	7	6	4	2	2	2	1	1	1	1	1	1	0	0	0	0
monthly	72	12		12	12	12	12	12	12	11	11	11	10	10	9	8	7	6	6	4	2	2	2	1	1	1	1	1	1	0	0	0	0
monthly	73	12		12	12	12	12	11	11	11	10	10	10	9	8	8	7	6	6	4	2	2	2	1	1	1	1	1	1	0	0	0	0
monthly	74	11		11	11	11	11	11	11	10	10	10	9	8	7	7	6	6	4	2	2	2	1	1	1	1	1	1	1	0	0	0	0
monthly	75	11		11	11	11	11	11	10	10	10	9	9	9	8	7	7	6	6	4	2	2	2	1	1	1	1	1	1	0	0	0	0
monthly	76	11		11	11	11	11	10	10	10	10	9	9	8	7	6	6	5	4	2	2	2	1	1	1	1	1	1	1	0	0	0	0
monthly	77	10		10	10	10	10	10	10	9	9	9	9	8	7	6	6	5	4	2	2	2	1	1	1	1	1	1	1	0	0	0	0
monthly	78	10		10	10	10	10	10	10	9	9	9	8	8	7	6	6	5	4	2	2	2	1	1	1	1	1	1	1	0	0	0	0
monthly	79	10		10	10	10	10	10	9	9	9	9	8	8	7	6	6	5	4	3	2	2	1	1	1	1	1	1	1	0	0	0	0
monthly	80	10		10	10	10	10	9	9	9	9	8	8	7	7	6	6	5	4	3	2	2	1	1	1	1	1	1	1	0	0	0	0

No inputs on this page

AveTime	StackHt(m)	Max	distance(m)=	10	20	30	40	50	60	70	80	90	100	120	140	160	180	200	250	300	350	400	500	600	700	800	900	1000	1500	2500	5000	7500	10000
monthly	81	9		9	9	9	9	9	9	9	9	8	8	7	6	6	5	5	4	3	2	1	1	1	1	1	1	1	0	0	0	0	0
monthly	82	9		9	9	9	9	9	9	9	8	8	8	7	6	6	5	5	4	3	2	1	1	1	1	1	1	0	0	0	0	0	0
monthly	83	9		9	9	9	9	9	8	8	8	8	8	7	6	6	5	5	4	3	2	1	1	1	1	1	1	0	0	0	0	0	0
monthly	84	9		9	9	9	9	8	8	8	8	8	7	7	6	6	5	5	4	3	2	1	1	1	1	1	1	0	0	0	0	0	0
monthly	85	8		8	8	8	8	8	8	8	8	8	7	7	6	5	5	5	4	3	2	1	1	1	1	1	1	0	0	0	0	0	0
monthly	86	8		8	8	8	8	8	8	8	8	7	7	7	6	5	5	5	4	3	2	1	1	1	1	1	1	0	0	0	0	0	0
monthly	87	8		8	8	8	8	8	8	8	7	7	7	6	6	5	5	5	4	3	2	1	1	1	1	1	1	0	0	0	0	0	0
monthly	88	8		8	8	8	8	8	8	7	7	7	7	6	6	5	5	4	4	3	2	1	1	1	1	1	1	0	0	0	0	0	0
monthly	89	8		8	8	8	8	8	7	7	7	7	7	6	6	5	5	4	4	3	2	1	1	1	1	1	1	0	0	0	0	0	0
monthly	90	7		7	7	7	7	7	7	7	7	7	7	6	6	5	5	4	4	3	2	1	1	1	1	1	1	0	0	0	0	0	0
monthly	91	7		7	7	7	7	7	7	7	7	7	6	6	6	5	5	4	4	3	2	1	1	1	1	1	1	0	0	0	0	0	0
monthly	92	7		7	7	7	7	7	7	7	7	7	6	6	5	5	4	4	3	3	2	1	1	1	1	1	1	0	0	0	0	0	0
monthly	93	7		7	7	7	7	7	7	7	7	6	6	6	5	5	4	4	3	3	2	1	1	1	1	1	1	0	0	0	0	0	0
monthly	94	7		7	7	7	7	7	7	7	6	6	6	6	5	5	4	4	3	3	2	1	1	1	1	1	1	0	0	0	0	0	0
monthly	95	7		7	7	7	7	7	7	6	6	6	6	6	5	5	4	4	3	3	2	1	1	1	1	1	1	0	0	0	0	0	0
monthly	96	7		7	7	7	6	6	6	6	6	6	6	6	5	5	4	4	3	3	2	1	1	1	1	1	1	0	0	0	0	0	0
monthly	97	6		6	6	6	6	6	6	6	6	6	6	5	5	5	4	4	3	3	2	1	1	1	1	1	1	0	0	0	0	0	0
monthly	98	6		6	6	6	6	6	6	6	6	6	6	5	5	4	4	4	3	3	2	1	1	1	1	1	1	0	0	0	0	0	0
monthly	99	6		6	6	6	6	6	6	6	6	6	6	5	5	4	4	4	3	3	2	1	1	1	1	1	1	0	0	0	0	0	0
AveTime	StackHt(m)	Max	distance(m)=	10	20	30	40	50	60	70	80	90	100	120	140	160	180	200	250	300	350	400	500	600	700	800	900	1000	1500	2500	5000	7500	10000
annual	1	3836		3836	1958	1216	826	600	457	360	292	243	205	153	119	95	79	66	46	34	26	21	14	11	8	7	6	5	2	1	0	0	0
annual	2	2465		2465	1554	940	593	410	310	250	210	180	157	122	98	81	68	58	41	31	24	20	14	10	8	6	5	4	2	1	0	0	0
annual	3	2357		2357	1236	775	542	402	305	239	192	156	131	98	78	65	56	49	36	28	22	18	13	10	8	6	5	4	2	1	0	0	0
annual	4	4211		4211	942	586	398	302	238	196	163	139	119	92	71	58	49	42	31	24	20	16	12	9	7	6	5	4	2	1	0	0	0
annual	5	2663		2663	754	479	334	245	186	151	127	110	96	76	62	52	43	37	27	21	17	14	11	8	7	6	5	4	2	1	0	0	0
annual	6	2090		2090	619	396	277	208	160	128	105	90	78	62	52	43	37	33	24	18	15	13	9	7	6	5	4	4	2	1	0	0	0
annual	7	1607		1607	885	322	232	175	137	111	91	77	66	52	43	37	32	28	20	16	13	11	9	7	5	5	4	3	2	1	0	0	0
annual	8	1230		1230	656	255	192	147	117	95	79	67	57	44	36	30	26	24	18	14	12	10	7	6	5	4	4	3	2	1	0	0	0
annual	9	944		944	506	299	164	128	103	85	71	61	52	40	32	27	23	20	15	13	10	9	7	5	4	4	3	3	2	1	0	0	0
annual	10	762		762	448	328	141	113	91	75	64	55	47	37	29	24	20	18	14	11	10	8	6	5	4	3	3	3	2	1	0	0	0
annual	11	622		622	398	275	123	96	80	67	56	48	42	33	27	22	19	16	12	10	8	7	5	4	4	3	3	2	1	1	0	0	0
annual	12	513		513	354	233	167	84	71	60	51	44	38	30	25	20	17	15	11	9	7	6	5	4	3	3	2	2	1	1	0	0	0
annual	13	434		434	316	204	170	75	63	54	46	40	35	28	23	19	16	14	10	8	7	6	4	4	3	3	2	2	1	1	0	0	0
annual	14	371		371	286	189	151	84	55	48	42	36	32	25	21	17	15	13	9	7	6	5	4	3	3	2	2	2	1	1	0	0	0
annual	15	320		320	254	176	134	101	50	43	37	33	29	23	19	16	14	12	9	7	6	5	4	3	3	2	2	2	1	1	0	0	0
annual	16	279		279	230	164	121	105	49	39	34	30	27	22	18	15	13	11	8	6	5	4	4	3	2	2	2	2	1	1	0	0	0
annual	17	245		245	206	153	110	96	62	37	32	28	25	20	17	14	12	11	8	6	5	4	3	3	2	2	2	1	1	1	0	0	0
annual	18	216		216	185	142	104	87	69	35	29	26	23	19	16	13	11	10	7	6	5	4	3	3	2	2	2	1	1	1	0	0	0
annual	19	192		192	167	132	98	79	70	38	28	24	22	18	15	13	11	9	7	5	4	4	3	2	2	2	1	1	1	0	0	0	0
annual	20	171		171	151	123	93	73	66	47	26	23	21	16	14	12	10	9	6	5	4	3	3	2	2	2	1	1	1	0	0	0	0
annual	21	153		153	137	114	87	68	60	49	26	22	19	16	13	11	9	8	6	5	4	3	2	2	2	2	1	1	1	0	0	0	0
annual	22	138		138	125	105	83	64	55	50	31	21	18	15	12	11	9	8	6	5	4	3	2	2	2	1	1	1	1	0	0	0	0
annual	23	125		125	114	98	79	61	51	48	36	20	17	14	12	10	9	8	6	4	4	3	2	2	2	1	1	1	1	0	0	0	0
annual	24	114		114	105	91	74	59	48	43	37	21	17	14	11	10	8	7	5	4	3	3	2	2	1	1	1	1	1	0	0	0	0
annual	25	104		104	96	85	70	56	46	41	37	25	16	13	11	9	8	7	5	4	3	3	2	2	1	1	1	1	1	0	0	0	0
annual	26	95		95	89	79	66	54	44	38	36	27	16	12	10	9	8	7	5	4	3	3	2	2	1	1	1	1	1	0	0	0	0
annual	27	88		88	82	73	63	51	42	36	33	28	18	12	10	9	7	6	5	4	3	3	2	2	1	1	1	1	1	0	0	0	0
annual	28	81		81	76	68	59	49	40	34	31	29	21	11	10	8	7	6	5	4	3	2	2	1	1	1	1	1	1	0	0	0	0
annual	29	74		74	70	64	56	47	39	32	29	28	22	11	9	8	7	6	5	4	3	2	2	1	1	1	1	1	1	0	0	0	0
annual	30	69		69	65	60	53	45	37	31	28	26	22	11	9	8	7	6	4	3	3	2	2	1	1	1	1	1	1	0	0	0	0
annual	31	64		64	61	56	50	42	36	30	26	24	22	11	8	7	6	6	4	3	3	2	2	1	1	1	1	1	0	0	0	0	0
annual	32	59		59	57	52	47	41	34	29	25	23	22	12	8	7	6	5	4	3	3	2	2	1	1	1	1	1	0	0	0	0	0
annual	33	55		55	53	49	45	39	33	28	24	22	21	13	8	7	6	5	4	3	3	2	2	1	1	1	1	1	0	0	0	0	0
annual	34	52		52	50	46	42	37	32	27	23	21	19	15	8	7	6	5	4	3	3	2	2	1	1	1	1	1	0	0	0	0	0
annual	35	48		48	47	44	40	36	31	26	22	20	19	15	7	6	6	5	4	3	2	2	2	1	1	1	1	1	0	0	0	0	0
annual	36	45		45	44	41	38	34	30	25	22	19	18	15	7	6	5	5	4	3	2	2	1	1	1	1	1	1	0	0	0	0	0
annual	37	43		43	41	39	36	33	28	25	21	19	17	15	8	6	5	5	4	3	2	2	1	1	1	1	1	1	0	0	0	0	0
annual	38	40		40	39	37	34	31	27	24	21	18	16	15	9	6	5	5	4	3	2	2	1	1	1	1	1	1	0	0	0	0	0
annual	39	38		38	37	35	33	30	26	23	20	17	16	14	10	6	5	4	3	3	2	2	1	1	1	1	1	1	0	0	0	0	0
annual	40	36		36	35	33	31	28	25	22	19	17	15	13	10	6	5	4	3	3	2	2	1	1	1	1	1	1	0	0	0	0	0
annual	41	34		34	33	31	29	27	24	22	19	17	15	13	10	6	5	4	3	3	2	2	1	1	1	1	1	1	0	0	0	0	0
annual	42	32		32	31	30	28	26	23	21	18	16	14	12	11	6	5	4	3	3	2	2	1	1	1	1	1	1	0	0	0	0	0
annual	43	30		30	30	29	27	25	23	20	18	16	14	12	11	7	4	4	3	2	2	2	1	1	1	1	1	0	0	0	0	0	0
annual	44	29		29	28	27	26	24	22	20	17	15	14	11	11	7	4	4	3	2	2	2	1	1	1	1	1	0	0	0	0	0	0
annual	45	27		27	27	26	25	23	21	19	17	15	13	11	10	8	4	4	3	2	2	2	1	1	1	1	1	0	0	0	0	0	0
annual	46	26		26	26	25	23	22	20	18	16	15	13	11	10	8	4	4	3	2	2	2	1	1	1	1	1	0	0	0	0	0	0
annual	47	25		25	25	24	22	21	20	18	16	14	13	10	9	8	5	4	3	2	2	2	1	1	1	1	1	0	0	0	0	0	0
annual	48	24		24	23	23	22	20	19	17	15	14	12	10	9	8	5	4	3	2	2	2	1	1	1	1	1	0	0	0	0	0	0
annual	49	23		23	22	22	21	19	18	17	15	14	12	10	9	8	5	4	3	3	2	2	2	1	1	1	1	0	0	0	0	0	0
annual	50	22		22	21	21	20	19	18	16	15	13	12	10	8	8	6	3	3	2	2	2	1	1	1	1	1	0	0	0	0	0	0
annual	51	21		21	20	20	19	18	17	16	14	13	12	9	8	8	6	3	3	2	2	2	1	1	1	1	1	0	0	0	0	0	0
annual	52	20		20	20	19	18	17	16	15	14	13	11	9	8	7	6	4	3	2	2	1	1	1	1	1	1	0	0	0	0	0	0
annual	53	19		19	19	18	18	17	16	15	14	12	11	9	8	7	6	4	2	2	2	1	1	1	1	1	1	0	0	0	0	0	0
annual	54	18		18	18	18	17	16	15	14	13	12	11	9	7	7	6	4	2	2	2	1	1	1	1	1	1	0	0	0	0	0	0
annual	55	17		17	17	17	16	16	15	14	13	12	11	9	7	7	6	5	2	2	2	1	1	1	1	1	1	0	0	0	0	0	0
annual	56	17		17	17	16	16	15	14	13	12	11	10	9	7	6	6	5	2	2	2	1	1	1	1	1	1	0	0	0	0	0	0
annual	57	16		16	16	16	15	15	14	13	12	11	10	8	7	6	6	5	2	2	2	1	1	1	1	1	1	0	0	0	0	0	0
annual	58	16		16	15	15	15	14	13	13	12	11	10	8	7	6	6	5	2	2	2	1	1	1	1	1	1	0	0	0	0	0	0
annual	59	15		15	15	15	14	14	13	12	11	11	10	8	7	6	6	5	2	2	1	1	1	1	1	1	1	0	0	0	0	0	0
annual	60	14		14	14	14	14	13	13	12	11	10	9	8	7	6	5	5	2	2	1	1	1	1	1	1	1	0	0	0	0	0	0
annual	61	14		14	14	14	13	13	12	11	11	10	9	8	7	6	5	5	2	2	1	1	1	1	1	1	0	0	0	0	0	0	0
annual	62	13		13	13	13	13	12	12	11	11	10	9	8	6	6	5	5	2	2	1	1	1	1	1	1	0	0	0	0	0	0	0
annual	63	13		13	13	13	12	12	11	11	10	10	9	7	6	5	5	5	2	2	1	1	1	1	1	1	0	0	0	0	0	0	0
annual	64	12		12	12	12	12	12	11	11	10	9	9	7	6	5	5	5	2	2	1	1	1	1	1	1	0	0	0	0	0	0	0
annual	65	12		12	12	12	12	11	11	10	10	9	9	7	6	5	5	4	2	2	1	1	1	1	1	1	0	0	0	0	0	0	0
annual	66	12		12	12	11	11	11	10	10	9	9	8	7	6	5	5	4	2	2	1	1	1	1	1	1	0	0	0	0	0	0	0
annual	67	11		11	11	11	11	11	10	10	9	9	8	7	6	5	4	4	3	2	1	1	1	1	1	1	0	0	0	0	0	0	0
annual	68	11		11	11	11	11	10	10	9	9	8	8	7	6	5	4	4	3	2	1	1	1	1	1	1	0	0	0	0	0	0	0
annual	69	11		11	11	10	10	10	10	9	9	8	8	7	6	5	4	4	3	2	1	1	1	1	1	1	0	0	0	0	0	0	0
annual	70	10		10	10	10	10	10	9	9	9	8	8	7	6	5	4	4	3	1	1	1	1	1	1	1	0	0	0	0	0	0	0
annual	71	10		10	10	10	10	9	9	9	8	8	7	6	6	5	4	4	3	1	1	1	1	1	1	1	0	0	0	0	0	0	0
annual	72	10		10	10	10	9	9	9	8	8	8	7	6	5	5	4	4	3	1	1	1	1	1	1	1	0	0	0	0	0	0	0
annual	73	9		9	9	9	9	9	9	8	8	8	7	7	6	5	5	4	4	3	1	1	1	1	1	1	0	0	0	0	0	0	0
annual	74	9		9	9	9	9	9	8	8	8	7	7	6	5	5	4	4	3	1	1	1	1	1	1	1	0	0	0	0	0	0	0
annual	75	9		9	9	9	9	8	8	8	7	7	7	6	5	5	4	4	3	1	1	1	1	1	1	1	0	0	0	0	0	0	0
annual	76	9		9	9	8	8	8	8	8	7	7	7	6	5	4	4	3	3	1	1	1	1	1	1	0	0	0	0	0	0	0	0

No inputs on this page

AveTime	StackHt(m)	Max	distance(m)=	10	20	30	40	50	60	70	80	90	100	120	140	160	180	200	250	300	350	400	500	600	700	800	900	1000	1500	2500	5000	7500	10000
annual	77	8		8	8	8	8	8	8	7	7	7	7	6	5	4	4	3	3	1	1	1	1	1	0	0	0	0	0	0	0	0	0
annual	78	8		8	8	8	8	8	7	7	7	7	6	6	5	4	4	3	3	2	1	1	1	1	0	0	0	0	0	0	0	0	0
annual	79	8		8	8	8	8	7	7	7	7	7	6	6	5	4	4	3	3	2	1	1	1	1	0	0	0	0	0	0	0	0	0
annual	80	8		8	8	8	7	7	7	7	7	6	6	5	5	4	4	3	3	2	1	1	1	1	0	0	0	0	0	0	0	0	0
annual	81	7		7	7	7	7	7	7	7	6	6	6	5	5	4	4	3	3	2	1	1	1	1	0	0	0	0	0	0	0	0	0
annual	82	7		7	7	7	7	7	7	7	6	6	6	5	5	4	4	3	3	2	1	1	1	1	0	0	0	0	0	0	0	0	0
annual	83	7		7	7	7	7	7	7	6	6	6	6	5	5	4	4	3	3	2	1	1	1	1	0	0	0	0	0	0	0	0	0
annual	84	7		7	7	7	7	7	6	6	6	6	6	5	5	4	4	3	3	2	1	1	1	1	0	0	0	0	0	0	0	0	0
annual	85	7		7	7	7	7	6	6	6	6	6	5	5	4	4	3	3	3	2	1	1	1	1	0	0	0	0	0	0	0	0	0
annual	86	7		7	7	6	6	6	6	6	6	6	5	5	4	4	3	3	2	2	1	1	1	1	0	0	0	0	0	0	0	0	0
annual	87	6		6	6	6	6	6	6	6	6	5	5	5	4	4	3	3	2	2	1	1	1	1	0	0	0	0	0	0	0	0	0
annual	88	6		6	6	6	6	6	6	6	6	5	5	5	4	4	3	3	2	2	1	1	1	1	0	0	0	0	0	0	0	0	0
annual	89	6		6	6	6	6	6	6	6	5	5	5	5	4	4	3	3	2	2	1	1	1	1	0	0	0	0	0	0	0	0	0
annual	90	6		6	6	6	6	6	6	5	5	5	5	5	4	4	3	3	2	2	1	1	1	1	0	0	0	0	0	0	0	0	0
annual	91	6		6	6	6	6	6	5	5	5	5	5	4	4	4	3	3	2	2	1	1	1	1	0	0	0	0	0	0	0	0	0
annual	92	6		6	6	6	6	5	5	5	5	5	5	4	4	4	3	3	2	2	1	1	1	1	0	0	0	0	0	0	0	0	0
annual	93	5		5	5	5	5	5	5	5	5	5	5	4	4	4	3	3	2	2	1	1	1	0	0	0	0	0	0	0	0	0	0
annual	94	5		5	5	5	5	5	5	5	5	5	5	4	4	3	3	3	2	2	1	1	1	0	0	0	0	0	0	0	0	0	0
annual	95	5		5	5	5	5	5	5	5	5	5	4	4	4	3	3	3	2	2	1	1	1	0	0	0	0	0	0	0	0	0	0
annual	96	5		5	5	5	5	5	5	5	5	5	4	4	4	3	3	3	2	2	1	1	1	0	0	0	0	0	0	0	0	0	0
annual	97	5		5	5	5	5	5	5	5	5	4	4	4	4	3	3	3	2	2	1	1	1	0	0	0	0	0	0	0	0	0	0
annual	98	5		5	5	5	5	5	5	5	4	4	4	4	4	3	3	3	2	2	1	1	1	0	0	0	0	0	0	0	0	0	0
annual	99	5		5	5	5	5	5	5	5	4	4	4	4	4	3	3	3	2	2	1	1	1	0	0	0	0	0	0	0	0	0	0

Attachment 2 – Subject item inventory and facility requirements

SI List

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	
Activity	Insignificant Air Emissions Activity	ACTV 3	Null	All IAs	
Agency Interest	Conventional Site	AISI 2005	Null	Null	
Component Group	Air Component Group	COMG 1	GP001	VOC and 1,2 (trans) Dichloroethylene Limits and VOC Coater, Water-Based Coater, UV Coater..	
		COMG 2	GP002	PM10 and PM2.5: Limits and Compliance Requirements for Ultraviolet (UV) Battery Terminal ..	
		COMG 4	Null	PM10 and PM2.5: Limits and Compliance Requirements for VOC Spray Battery Terminal Post ..	
		COMG 5	Null	Permanent Total Enclosure Requirements: Coating Rooms	
		COMG 6	Null	Indirect Heating Equipment Rule Requirements	
		COMG 7	Null	Industrial Process Equipment Rule Requirements	
		COMG 8	Null	PM10 and PM2.5: Limits and Compliance Requirements for Water-Based Spray Battery Termi..	
		COMG 9	Null	Sub-Slab Vapor Mitigation System: Operation Requirements	
		COMG 10	Null	NOx: North Building Space Heating Capacity and Operation Limits	
		COMG 11	Null	Nederman Filter and Smog Hog Control Equipment Train – Melt Pots	
		COMG 12	Null	Nederman Filter and Smog Hog Control Equipment Train - Die Casting	
		COMG 13	Null	Direct Heating Equipment Rule Requirements	
		COMG 14	Null	HEPA Filters - Spray Coaters	
		COMG 15	Null	NOx: South Building Space Heating Capacity and Operation Limits	
		COMG 16	Null	Die Casting Annual Throughput and Lead Emission Limits	
Equipment	Abrasive Equipment	EQUI 113	Null	Tool room 1 Abrasive Blasting	
		EQUI 114	Null	Tool room 2 Abrasive Blasting	
		EQUI 115	Null	DC Abrasive Blasting	
	Casting Equipment	EQUI 121	Null	Die Cast (DC09)	
		EQUI 122	Null	Die Cast (DC12)	
		EQUI 123	Null	Die Cast (DC33)	
		EQUI 124	Null	Die Cast (DC14)	
		EQUI 125	Null	Die Cast (DC15)	
		EQUI 126	Null	Die Cast (DC21)	
		EQUI 127	Null	Die Cast (DC08)	
		EQUI 128	Null	Die Cast (DC10)	
		EQUI 129	Null	Die Cast (DC17)	
		EQUI 130	Null	Die Cast (DC18)	
		EQUI 131	Null	Die Cast (DC36)	
		EQUI 132	Null	Die Cast (DC37)	
		EQUI 133	Null	Die Cast (DC25)	
		EQUI 134	Null	Die Cast (DC22)	
		EQUI 135	Null	Die Cast (DC35)	
		EQUI 136	Null	Die Cast (DC32)	
		EQUI 137	Null	Die Cast (DC26)	
		EQUI 138	Null	Die Cast (DC27)	
		EQUI 139	Null	Die Cast (DC16)	
		EQUI 140	Null	Die Cast (DC28)	
		EQUI 141	Null	Die Cast (DC29)	
		EQUI 142	Null	Die Cast (DC19)	
		EQUI 143	Null	Die Cast (DC34)	
		EQUI 146	Null	Die Cast (DC42)	
		EQUI 147	Null	Die Cast (DC38)	
		EQUI 149	Null	Die Cast (DC40)	
		EQUI 150	Null	Die Cast (DC48)	
		EQUI 152	Null	Die Cast (DC41)	
		EQUI 153	Null	Die Cast (DC44)	
		EQUI 154	Null	Die Cast (DC45)	
		EQUI 155	Null	Die Cast (DC52)	
		EQUI 156	Null	Die Cast (DC50)	
		EQUI 157	Null	Die Cast (DC51)	
		EQUI 158	Null	Die Cast (DC53)	
		EQUI 160	Null	Billet Saw	
	Continuous Emission Monitor	EQUI 176	Null	VOC CEMS (STRU 73)	
	Data Acquisition System	EQUI 168	Null	Building Management System	
	Distillation Equipment	EQUI 174	Null	Solvent Distillation Unit	
	Melting Equipment	EQUI 101	Null	CF Scrap Re-Melt Pot	
		EQUI 102	Null	Small Re-Melt Pot	
		EQUI 103	Null	Doe Run Melt Pot	
		EQUI 104	Null	CF Re-Melt Pot	
		EQUI 221	Null	Tin Melt Pot	
	Other Combustion	EQUI 106	Null	Make-up Air Unit 1N	
		EQUI 107	Null	Make-up Air Unit 2N	
		EQUI 108	Null	Make-up Air Unit 3N	
		EQUI 109	Null	Make-up Air Unit 5N	
		EQUI 110	Null	Make-up Air Unit 6N	
		EQUI 111	Null	Make-up Air Unit 9N	

		EQUI 112	Null	Make-up Air Unit 11N	
		EQUI 177	Null	Roof-top Unit 1N	
		EQUI 178	Null	Roof-top Unit 2N	

SI List

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	
Equipment	Other Combustion	EQUI 179	Null	Roof-top Unit 3N	
		EQUI 180	Null	Roof-top Unit 4N	
		EQUI 181	Null	Roof-top Unit 5N	
		EQUI 182	Null	Roof-top Unit 6N	
		EQUI 183	Null	Roof-top Unit 7N	
		EQUI 184	Null	Roof-top Unit 8N	
		EQUI 185	Null	Roof-top Unit 9N	
		EQUI 186	Null	Roof-top Unit 10N	
		EQUI 187	Null	Roof-top Unit 11N	
		EQUI 188	Null	Roof-top Unit 12N	
		EQUI 189	Null	Roof-top Unit 13N	
		EQUI 190	Null	Roof-top Unit 14N	
		EQUI 191	Null	Roof-top Unit 15N	
		EQUI 192	Null	Roof-top Unit 16N	
		EQUI 193	Null	Roof-top Unit 17N	
		EQUI 194	Null	Roof-top Unit 18N	
		EQUI 195	Null	Roof-top Unit 19N	
		EQUI 196	Null	Roof-top Unit 20N	
		EQUI 197	Null	Roof-top Unit 21N	
		EQUI 198	Null	Make-up Air Unit 12N	
		EQUI 199	Null	Make-up Air Unit 13N	
		EQUI 200	Null	Make-up Air Unit 14N	
		EQUI 201	Null	Make-up Air Unit 15N	
		EQUI 202	Null	Make-up Air Unit 16N	
		EQUI 203	Null	Space Heater 1N	
		EQUI 204	Null	Space Heater 2N	
		EQUI 205	Null	Space Heater 3N	
		EQUI 206	Null	Space Heater 4N	
		EQUI 207	Null	Space Heater 5N	
		EQUI 208	Null	Roof-top Unit 1S	
		EQUI 209	Null	Roof-top Unit 2S	
		EQUI 210	Null	Roof-top Unit 3S	
		EQUI 211	Null	Roof-top Unit 4S	
		EQUI 212	Null	Roof-top Unit 5S	
		EQUI 213	Null	Roof-top Unit 6S	
		EQUI 214	Null	Roof-top Unit 7S	
		EQUI 215	Null	Roof-top Unit 8S	
		EQUI 216	Null	Roof-top Unit 9S	
		EQUI 217	Null	Make-up Air Unit 1S	
		EQUI 218	Null	Make-up Air Unit 2S	
		EQUI 222	Null	Natural Gas Bake Oven	
		EQUI 234	Null	Make-up Air Unit 17N	
		EQUI 235	Null	Roof-top Unit 10S	
		EQUI 236	Null	Roof-top Unit 11S	
	Other Emission Unit	EQUI 223	Null	Coining Booth 1	
		EQUI 224	Null	Coining Booth 2	
		EQUI 225	Null	Coining Booth 3	
		EQUI 226	Null	Coining Booth 4	
		EQUI 227	Null	Coining Booth 5	
		EQUI 228	Null	Coining Booth 6	
		EQUI 229	Null	Coining Booth 7	
		EQUI 230	Null	Coining Booth 8	
		EQUI 231	Null	Coining Booth 9	
		EQUI 232	Null	Coining Booth 10	
	Parametric Monitor	EQUI 169	Null	Coating Room 1 Pressure Drop Gauge	
		EQUI 170	Null	Coating Room 2 Pressure Drop Gauge	
		EQUI 171	Null	Coating Room 3 Pressure Drop Gauge	
	Reciprocating IC Engine	EQUI 120	Null	Emergency Generator Engine	
	Solvent Equipment	EQUI 166	Null	Coating Room Bulk Solvent Tank	
		EQUI 173	Null	Coating Room Soaker Tank	
	Spray Booth/Coating Line	EQUI 82	Null	Battery Terminal Post Coater 6	
		EQUI 84	Null	Battery Terminal Post Coater 9	
		EQUI 85	Null	Battery Terminal Post Coater 10	
		EQUI 87	Null	Battery Terminal Post Coater 12	
		EQUI 88	Null	Battery Terminal Post Coater 15	
		EQUI 89	Null	Battery Terminal Post Coater 17	
		EQUI 92	Null	Battery Terminal Post Coater 20	
		EQUI 93	Null	Battery Terminal Post Coater 21	
		EQUI 94	Null	Battery Terminal Post Coater 22	

		EQUI 95	Null	Battery Terminal Post Coater 23	
		EQUI 97	Null	Battery Terminal Post Coater 25	
		EQUI 98	Null	Battery Terminal Post Coater 26	

SI List

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	
Equipment	Spray Booth/Coating Line	EQUI 99	Null	Battery Terminal Post Coater 27	
		EQUI 100	Null	Battery Terminal Post Coater 28	
		EQUI 116	Null	Battery Terminal Post Coater 30	
		EQUI 117	Null	South Building R&D Coater	
		EQUI 172	Null	Battery Terminal Post Coater 29	
		EQUI 219	Null	Battery Terminal Post Coater 33	
		EQUI 220	Null	Battery Terminal Post Coater 34	
		EQUI 233	Null	Battery Terminal Post Coater 19	
		EQUI 240	Null	Prototype Coater	
	Sub-slab Depressurization System	EQUI 167	Null	Solvent Vapor Remediation System	
Fugitive	Cooling Tower	FUGI 1	Null	Cooling Tower 1 (CT1)	
		FUGI 2	Null	Cooling Tower 2 (CT2)	
		FUGI 4	Null	Cooling Tower #3 (CT3)	
	Paved Road	FUGI 3	Null	Paved Roads	
Structure	Building	STRU 38	Null	North Building	
		STRU 42	Null	South Building	
	Stack/Vent	STRU 1	SV003	Smog Hog #15 Stack	
		STRU 4	SV002	Emergency Generator Engine Stack	
		STRU 15	Null	Smog Hog #1 Stack	
		STRU 16	Null	Smog Hog #2 Stack	
		STRU 17	Null	Smog Hog #3 Stack	
		STRU 20	Null	Smog Hog #6 Stack	
		STRU 23	Null	Smog Hog #9 Stack	
		STRU 24	Null	Smog Hog #10 Stack	
		STRU 25	Null	Smog Hog #11 Stack	
		STRU 26	Null	Smog Hog #12 Stack	
		STRU 30	Null	Smog Hog #16 Stack	
		STRU 31	Null	Smog Hog #17 Stack	
		STRU 32	Null	Smog Hog #18 Stack	
		STRU 33	Null	Smog Hog #19 Stack	
		STRU 34	Null	Smog Hog #20 Stack	
		STRU 35	Null	Smog Hog #21 Stack	
		STRU 41	Null	Solvent Vapor Remediation System Stack	
		STRU 43	Null	Exhaust fan #7	
		STRU 44	Null	Exhaust fan #1	
		STRU 45	Null	Exhaust fan #2	
		STRU 46	Null	Exhaust fan #3	
		STRU 47	Null	Exhaust fan #4	
		STRU 48	Null	Exhaust fan #5	
		STRU 49	Null	Exhaust fan #6	
		STRU 50	Null	Exhaust fan #8	
		STRU 51	Null	Exhaust fan #9	
		STRU 52	Null	Exhaust fan #10	
		STRU 53	Null	Exhaust fan #11	
		STRU 56	Null	Exhaust fan #14	
		STRU 57	Null	Shipping vent 20	
		STRU 59	Null	Exhaust fan #12	
		STRU 60	Null	Exhaust fan #13	
		STRU 68	Null	Melt Pot Room Vent	
		STRU 69	Null	Doe Run Melt Pot Natural Gas Vent	
		STRU 70	Null	Natural Gas Bake Oven Stack	
		STRU 71	Null	Coining Booth Stacks	
		STRU 72	Null	Fume Hood Vent	
		STRU 73	Null	Battery Terminal Post Coater Stack	
		STRU 74	Null	Smog Hog #5 Stack	
		STRU 75	Null	Smog Hog #8 Stack	
Total Facility	Air Quality Total Facility	TFAC 1	12300341	Water Gremlin Co	
Treatment	010-Electrostatic Precipitator - High Efficiency	TREA 78	Null	Smog Hog #5	
		TREA 79	Null	Smog-Hog #8	
	012-Electrostatic Precipitator - Low Efficiency	TREA 1	CE002	Smog Hog #15	
		TREA 25	Null	Smog Hog #1	
		TREA 26	Null	Smog Hog #2	
		TREA 27	Null	Smog Hog #3	
		TREA 30	Null	Smog Hog #6	
		TREA 33	Null	Smog Hog #9	
		TREA 34	Null	Smog Hog #10	
		TREA 35	Null	Smog Hog #11	
		TREA 36	Null	Smog Hog #12	

		TREA 39	Null	Smog Hog #16	
		TREA 40	Null	Smog Hog #17	
		TREA 41	Null	Smog Hog #18	
		TREA 42	Null	Smog Hog #19	

SI List

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	
Treatment	Efficiency	TREA 43	Null	Smog Hog #20	
	048-Activated Carbon Adsorption	TREA 50	Null	Carbon Canister 1	
		TREA 51	Null	Carbon Canister 2	
	101-High Efficiency Particulate Air Filter (HEPA)	TREA 52	Null	HEPA Filter - Tool Room 1 Abrasive Blasting	
		TREA 53	Null	HEPA Filter - Tool Room 2 Abrasive Blasting	
		TREA 54	Null	HEPA Filter - DC Abrasive Blasting	
		TREA 55	Null	HEPA Filter - EQUI 84	
		TREA 56	Null	HEPA Filter - EQUI 88	
		TREA 57	Null	HEPA Filter - EQUI 95	
		TREA 58	Null	HEPA Filter - EQUI 219	
		TREA 59	Null	HEPA Filter - EQUI 220	
		TREA 60	Null	Nederman Filter 15N - STRU 1	
		TREA 61	Null	Nederman Filter 1N - STRU 15	
		TREA 62	Null	Nederman Filter 2N1 - STRU 16	
		TREA 63	Null	Nederman Filter 2N2 - STRU 16	
		TREA 64	Null	Nederman Filter 3N - STRU 17	
		TREA 65	Null	Nederman Device 5N - STRU 74	
		TREA 66	Null	Nederman Filter 6N - STRU 20	
		TREA 67	Null	Nederman Device 8N - STRU 75	
		TREA 68	Null	Nederman Filter 9N - STRU 23	
		TREA 69	Null	Nederman Filter 10N - STRU 24	
		TREA 70	Null	Nederman Filter 11N - STRU 25	
		TREA 71	Null	Nederman Filter 12N1 - STRU 26	
		TREA 72	Null	Nederman Filter 12N2 - STRU 26	
		TREA 73	Null	Nederman Filter 16N - STRU 30	
		TREA 74	Null	Nederman Filter 17N - STRU 31	
		TREA 75	Null	Nederman Filter 18N - STRU 32	
		TREA 76	Null	Nederman Filter 19N - STRU 33	
		TREA 77	Null	Nederman Filter 20N - STRU 34	

Insignificant Activities

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Category	SI Type	Status Description	Sub Attribute Description	
Activity	Insignificant Air Emissions Activity	Active / Existing	Minn. R. 7007.1300, subp. 3(E)	
			Minn. R. 7007.1300, subp. 3(F)	

Emission Units 1

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Type	Subject Item ID	Delta Designation	Description	Manufacturer	Model	Max Design Capacity	Max Design Capacity Units	Material	Firing Method	Subject to CSAPR?	Electric Generating Capacity (MW)	Construction Start Date	Operation Start Date	Modification Date	
Other Combustion	EQUI 106	Null	Make-up Air Unit 1N	RUPP	R1d.250-G10	2.5	million British thermal units/hours	Heat	Not coal burning	Null	Null	1/1/1993	1/1/1993	Null	
	EQUI 107	Null	Make-up Air Unit 2N	CaptiveAire	CAH230	6.05	million British thermal units/hours	Heat	Not coal burning	Null	Null	1/1/2016	1/1/2016	Null	
	EQUI 108	Null	Make-up Air Unit 3N	CaptiveAire	CAH230	5.61	million British thermal units/hours	Heat	Not coal burning	Null	Null	1/1/2015	1/1/2015	Null	
	EQUI 109	Null	Make-up Air Unit 5N	CaptiveAire	CAH36	4.95	million British thermal units/hours	Heat	Not coal burning	Null	Null	1/1/2016	1/1/2016	Null	
	EQUI 110	Null	Make-up Air Unit 6N	RUPP	RAM227	5.4	million British thermal units/hours	Heat	Not coal burning	Null	Null	1/1/1997	1/1/1997	Null	
	EQUI 111	Null	Make-up Air Unit 9N	Titan	TA220NGHRH2SPD	2.2	million British thermal units/hours	Heat	Not coal burning	Null	Null	1/1/1995	1/1/1995	Null	
	EQUI 112	Null	Make-up Air Unit 11N	Industrial Air	QD230C	4.61	million British thermal units/hours	Heat	Not coal burning	Null	Null	1/1/1996	1/1/1996	Null	
	EQUI 177	Null	Roof-top Unit 1N	Lennox	GCS1651256P	125,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 178	Null	Roof-top Unit 2N	Carrier	48HJE008531	180,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 179	Null	Roof-top Unit 3N	Lennox	GCS166537514	75,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 180	Null	Roof-top Unit 4N	Carrier	48TJE007601	115,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 181	Null	Roof-top Unit 5N	Lennox	TGA08B2DH1Y	150,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 182	Null	Roof-top Unit 6N	InnerCity Products	PGMB04BH125IN1	125,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 183	Null	Roof-top Unit 7N	Carrier	48TJE012611	224,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 184	Null	Roof-top Unit 8N	Lennox	LGA156HS1G	260,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 185	Null	Roof-top Unit 9N	Lennox	LGA120HH1G	235,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 186	Null	Roof-top Unit 10N	Lennox	LGA156HS1G	260,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 187	Null	Roof-top Unit 11N	Bryant BDP	580DEV060115	115,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 188	Null	Roof-top Unit 12N	Snyder General	CUR100FN14	140,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 189	Null	Roof-top Unit 13N	Carrier	48HFT006510	120,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 190	Null	Roof-top Unit 14N	Lennox	GCS16-13532705Y	270,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 191	Null	Roof-top Unit 15N	Carrier	48HDT005510	120,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 192	Null	Roof-top Unit 16N	Carrier	48HDT005510	120,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 193	Null	Roof-top Unit 17N	Lennox	LGA120HH1G	235,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 194	Null	Roof-top Unit 18N	Detroit Radiant Prod Co	HL3-60-200	200,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 195	Null	Roof-top Unit 19N	Carrier	48HCTD14J2A6-0A0G0	240,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 196	Null	Roof-top Unit 20N	AO Smith	BTH-15ALV	150,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 197	Null	Roof-top Unit 21N	AO Smith	BTH-15ALV	150,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	

	EQUI 198	Null	Make-up Air Unit 12N	CaptiveAire	CAH20	1,424,348	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	

Emission Units 1

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Type	Subject Item ID	Delta Designation	Description	Manufacturer	Model	Max Design Capacity	Max Design Capacity Units	Material	Firing Method	Subject to CSAPR?	Electric Generating Capacity (MW)	Construction Start Date	Operation Start Date	Modification Date	
Other Combustion	EQUI 199	Null	Make-up Air Unit 13N	CaptiveAire	CAH20	1,424,348	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 200	Null	Make-up Air Unit 14N	CaptiveAire	A2-D.500-G15-MPU	550,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 201	Null	Make-up Air Unit 15N	Industrial Air	DAC120HRS	972,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 202	Null	Make-up Air Unit 16N	Industrial Air	DAC122HRS	1,512,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 203	Null	Space Heater 1N	Lennox	LF24-150A-2	150,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 204	Null	Space Heater 2N	Lennox	LF24-150A-2	150,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 205	Null	Space Heater 3N	Dayton	3E134E	90,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 206	Null	Space Heater 4N	Enerco	ER2-6ON	60,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 207	Null	Space Heater 5N	Wire Heater	N/A	400,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 208	Null	Roof-top Unit 1S	Sterling	TF250ANS110	250,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 209	Null	Roof-top Unit 2S	Sterling	TF250ANS110	250,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 210	Null	Roof-top Unit 3S	Sterling	TF250ANS110	250,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 211	Null	Roof-top Unit 4S	Lennox	KGA060S4D	150,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 212	Null	Roof-top Unit 5S	Lennox	KGA060S4D	150,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 213	Null	Roof-top Unit 6S	Lennox	KGA120S4B	180,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 214	Null	Roof-top Unit 7S	Lennox	KGA092S4B	130,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 215	Null	Roof-top Unit 8S	Lennox	KGA048S4D	65,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 216	Null	Roof-top Unit 9S	Lennox	KGA048S4D	65,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 217	Null	Make-up Air Unit 1S	Rupp	RID-250-G10	237,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 218	Null	Make-up Air Unit 2S	Greencheck	DG-P11S-HOS-VFD	228,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 222	Null	Natural Gas Bake Oven	Water Gremlin	Custom	0.3	million British thermal units/each	Heat	Not coal burning	Null	Null	1/1/1998	1/1/1998	Null	
	EQUI 234	Null	Make-up Air Unit 17N	TBD	TBD	350,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 235	Null	Roof-top Unit 10S	TBD	TBD	228,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	
	EQUI 236	Null	Roof-top Unit 11S	TBD	TBD	110,000	million British thermal units/hours	Heat	Not coal burning	Null	Null	TBD	TBD	Null	

Emission Units 2

AIID(Name):2005(WaterGremlinCo)
Activity: IND20180001

SI Type	Subject ItemID	Delta Designation	Description	Manufacturer	Model	Max Design Capacity	MaxDesign Capacity Units	Material	Engine Use	Firing Method	Engine Displacement	Engine Displacement Units	Construction Start Date	Operation Start Date	Modification Date	
Reciprocating IC Engine	EQUI 120	Null	Emergency Generator Engine	John Deere	4024HF285	0.6	million British thermal units/hours	Heat	Emergency/black..	CI	2,392.51	total cubic centimeters	5/1/2012	5/1/2012	Null	

Emission Units 3

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Type	Subject Item ID	Delta Designation	Description	Manufacturer	Model	Max Design Capacity	Max Design Capacity Units	Material	Construction Start Date	Operation Start Date	Modification Date	
Abrasive Equipment	EQUI 113	Null	Tool room 1 Abrasive Blasting	Gopher	NA	314	pounds/hours	Sand	1/1/1979	1/1/1979	Null	
	EQUI 114	Null	Tool room 2 Abrasive Blasting	Gopher	NA	231	pounds/hours	Sand	1/1/1989	1/1/1989	Null	
	EQUI 115	Null	DC Abrasive Blasting	Gopher	NA	210	pounds/hours	Sand	1/1/2015	1/1/2015	Null	
Casting Equipment	EQUI 121	Null	Die Cast (DC09)	Prince	SP	0.11	tons/hours	Material	1/1/1973	1/1/1973	Null	
	EQUI 122	Null	Die Cast (DC12)	B&T	SP	0.08	tons/hours	Material	1/1/1966	1/1/1966	Null	
	EQUI 123	Null	Die Cast (DC33)	Prince	SP	0.15	tons/hours	Material	1/1/1995	1/1/1995	Null	
	EQUI 124	Null	Die Cast (DC14)	B&T	SP	0.06	tons/hours	Material	1/1/1962	1/1/1962	Null	
	EQUI 125	Null	Die Cast (DC15)	B&T	SP	0.09	tons/hours	Material	1/1/1967	1/1/1967	Null	
	EQUI 126	Null	Die Cast (DC21)	Prince	SP	0.27	tons/hours	Material	1/1/1968	1/1/1968	Null	
	EQUI 127	Null	Die Cast (DC08)	Prince	SP	0.04	tons/hours	Material	1/1/1978	1/1/1978	Null	
	EQUI 128	Null	Die Cast (DC10)	Prince	SP	0.05	tons/hours	Material	1/1/1979	1/1/1979	Null	
	EQUI 129	Null	Die Cast (DC17)	Prince	SP	0.06	tons/hours	Material	1/1/1966	1/1/1966	Null	
	EQUI 130	Null	Die Cast (DC18)	Prince	SP	0.06	tons/hours	Material	1/1/1966	1/1/1966	Null	
	EQUI 131	Null	Die Cast (DC36)	Prince	SP	0.32	tons/hours	Material	1/1/1966	1/1/1966	Null	
	EQUI 132	Null	Die Cast (DC37)	Prince	SP	0.11	tons/hours	Material	1/1/1998	1/1/1998	Null	
	EQUI 133	Null	Die Cast (DC25)	Prince	SP	0.12	tons/hours	Material	1/1/1990	1/1/1990	Null	
	EQUI 134	Null	Die Cast (DC22)	Prince	SP	0.19	tons/hours	Material	1/1/1978	1/1/1978	Null	
	EQUI 135	Null	Die Cast (DC35)	Prince	SP	0.32	tons/hours	Material	1/1/1996	1/1/1996	Null	
	EQUI 136	Null	Die Cast (DC32)	Prince	SP	0.45	tons/hours	Material	1/1/1995	1/1/1995	Null	
	EQUI 137	Null	Die Cast (DC26)	Prince	SP	0.12	tons/hours	Material	1/1/1992	1/1/1992	Null	
	EQUI 138	Null	Die Cast (DC27)	Prince	SP	0.28	tons/hours	Material	1/1/1992	1/1/1992	Null	

	EQUI 139	Null	Die Cast (DC16)	B&T	SP	0.3	tons/hours	Material	1/1/1973	1/1/1973	Null	

Emission Units 3

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Type	Subject Item ID	Delta Designation	Description	Manufacturer	Model	Max Design Capacity	Max Design Capacity Units	Material	Construction Start Date	Operation Start Date	Modification Date	
Casting Equipment	EQUI 140	Null	Die Cast (DC28)	Prince	SP	0.23	tons/hours	Material	1/1/1994	1/1/1994	Null	
	EQUI 141	Null	Die Cast (DC29)	Prince	SP	0.13	tons/hours	Material	1/1/1995	1/1/1995	Null	
	EQUI 142	Null	Die Cast (DC19)	B&T	SP	0.12	tons/hours	Material	1/1/1973	1/1/1973	Null	
	EQUI 143	Null	Die Cast (DC34)	B&T	SP	0.22	tons/hours	Material	1/1/1984	1/1/1984	Null	
	EQUI 146	Null	Die Cast (DC42)	Prince	SP	0.6	tons/hours	Material	1/1/1999	1/1/1999	Null	
	EQUI 147	Null	Die Cast (DC38)	Prince	SP	0.6	tons/hours	Material	1/1/1998	1/1/1998	Null	
	EQUI 149	Null	Die Cast (DC40)	B&T	SP	0.19	tons/hours	Material	1/1/1987	1/1/1987	Null	
	EQUI 150	Null	Die Cast (DC48)	Prince	SP	0.31	tons/hours	Material	1/1/1992	1/1/1992	Null	
	EQUI 152	Null	Die Cast (DC41)	Prince	SP	0.12	tons/hours	Material	1/1/1999	1/1/1999	Null	
	EQUI 153	Null	Die Cast (DC44)	Prince	DP	0.59	tons/hours	Material	1/1/1999	1/1/1999	Null	
	EQUI 154	Null	Die Cast (DC45)	Prince	SP	0.51	tons/hours	Material	1/1/2000	1/1/2000	Null	
	EQUI 155	Null	Die Cast (DC52)	Prince	SP	0.2	tons/years	Lead	1/1/1996	1/1/1996	Null	
	EQUI 156	Null	Die Cast (DC50)	Prince	SP	0.43	tons/hours	Material	1/1/2008	1/1/2008	Null	
	EQUI 157	Null	Die Cast (DC51)	Buhler Prince	SP	0.59	tons/hours	Material	1/1/2018	1/1/2018	Null	
	EQUI 158	Null	Die Cast (DC53)	Buhler Prince	SP	0.59	tons/hours	Material	1/1/2017	1/1/2017	Null	
	EQUI 160	Null	Billet Saw	Water Gremlin	Custom	0.38	tons/hours	Material	1/1/1994	1/1/1994	Null	
Distillation Equipment	EQUI 174	Null	Solvent Distillation Unit	Detrex	FC30-EW	170	gallons/each	Material	1/1/1998	1/1/1998	Null	
Melting Equipment	EQUI 101	Null	CF Scrap Re-Melt Pot	Water Gremlin	Custom	1.5	million British thermal units/hours	Heat	1/1/1991	1/1/1991	Null	
	EQUI 102	Null	Small Re-Melt Pot	Water Gremlin	Custom	0.5	million British thermal units/hours	Heat	1/1/1991	1/1/1991	Null	
	EQUI 103	Null	Doe Run Melt Pot	N/A	N/A	0.5	million British thermal units/hours	Heat	1/1/1991	1/1/1991	Null	
	EQUI 104	Null	CF Re-Melt Pot	N/A	N/A	0.34	million British thermal units/hours	Heat	1/1/1991	1/1/1991	Null	

	EQUI 221	Null	Tin Melt Pot	N/A	N/A	1.25	tons/hours	Material	1/1/1998	1/1/1998	Null	

Emission Units 3

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Type	Subject Item ID	Delta Designation	Description	Manufacturer	Model	Max Design Capacity	Max Design Capacity Units	Material	Construction Start Date	Operation Start Date	Modification Date	
Other Emission Unit	EQUI 223	Null	Coining Booth 1	Water Gremlin	Custom	55	pounds/hours	Material	1/1/1998	1/1/1998	Null	
	EQUI 224	Null	Coining Booth 2	Water Gremlin	Custom	40	pounds/hours	Material	1/1/1998	1/1/1998	Null	
	EQUI 225	Null	Coining Booth 3	Water Gremlin	Custom	46	pounds/hours	Material	1/1/1998	1/1/1998	Null	
	EQUI 226	Null	Coining Booth 4	Water Gremlin	Custom	17	pounds/hours	Material	1/1/1998	1/1/1998	Null	
	EQUI 227	Null	Coining Booth 5	Water Gremlin	Custom	48	pounds/hours	Material	1/1/1998	1/1/1998	Null	
	EQUI 228	Null	Coining Booth 6	Water Gremlin	Custom	62	pounds/hours	Material	1/1/1998	1/1/1998	Null	
	EQUI 229	Null	Coining Booth 7	Water Gremlin	Custom	52	pounds/hours	Material	1/1/1998	1/1/1998	Null	
	EQUI 230	Null	Coining Booth 8	Water Gremlin	Custom	79	pounds/hours	Material	1/1/1998	1/1/1998	Null	
	EQUI 231	Null	Coining Booth 9	Water Gremlin	Custom	194	pounds/hours	Material	1/1/1998	1/1/1998	Null	
	EQUI 232	Null	Coining Booth 10	Water Gremlin	Custom	138	pounds/hours	Material	1/1/1998	1/1/1998	Null	
Solvent Equipment	EQUI 166	Null	Coating Room Bulk Solvent Tank	Water Gremlin	Custom	5.06	pounds/hours	Solvents	1/1/1993	1/1/1993	Null	
	EQUI 173	Null	Coating Room Soaker Tank	Water Gremlin	Custom	5.26	pounds/hours	Solvents	8/1/2019	8/1/2019	Null	
Spray Booth/Coating Line	EQUI 82	Null	Battery TerminalPost Coater 6	Water Gremlin	Custom	0.82	pounds/hours	Coating	1/1/1996	1/1/1996	2/23/2021	
	EQUI 84	Null	Battery TerminalPost Coater 9	Water Gremlin	Custom	1.32	pounds/hours	Coating	1/1/1998	1/1/1998	12/9/2021	
	EQUI 85	Null	Battery TerminalPost Coater 10	Water Gremlin	Custom	22.06	pounds/hours	Solvents	1/1/1999	1/1/1999	Null	
	EQUI 87	Null	Battery TerminalPost Coater 12	Water Gremlin	Custom	13.25	pounds/hours	Solvents	1/1/1998	1/1/1998	Null	
	EQUI 88	Null	Battery TerminalPost Coater 15	Water Gremlin	Custom	4.73	pounds/hours	Solvents	1/1/1997	1/1/1997	Null	
	EQUI 89	Null	Battery TerminalPost Coater 17	Water Gremlin	Custom	19.4	pounds/hours	Solvents	1/1/2000	1/1/2000	Null	
	EQUI 92	Null	Battery TerminalPost Coater 20	Water Gremlin	Custom	19.69	pounds/hours	Solvents	1/1/2001	1/1/2001	Null	
	EQUI 93	Null	Battery TerminalPost Coater 21	Water Gremlin	Custom	66.26	pounds/hours	Solvents	1/1/2004	1/1/2004	Null	
	EQUI 94	Null	Battery TerminalPost Coater 22	Water Gremlin	Custom	15.03	pounds/hours	Solvents	1/1/2006	1/1/2006	Null	

	EQUI 95	Null	Battery TerminalPost Coater 23	Water Gremlin	Custom	2.36	pounds/hours	Solvents	1/1/2008	1/1/2008	Null	

Emission Units 3

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Type	Subject Item ID	Delta Designation	Description	Manufacturer	Model	Max Design Capacity	Max Design Capacity Units	Material	Construction Start Date	Operation Start Date	Modification Date	
Spray Booth/Coating Line	EQUI 97	Null	Battery TerminalPost Coater 25	Water Gremlin	Custom	5.25	pounds/hours	Solvents	1/1/2011	1/1/2011	Null	
	EQUI 98	Null	Battery TerminalPost Coater 26	Water Gremlin	Custom	2.03	pounds/hours	Solvents	1/1/2012	1/1/2012	Null	
	EQUI 99	Null	Battery TerminalPost Coater 27	Water Gremlin	Custom	17.46	pounds/hours	Solvents	1/1/2012	1/1/2012	Null	
	EQUI 100	Null	Battery TerminalPost Coater 28	Water Gremlin	Custom	3.85	pounds/hours	Solvents	1/1/2018	1/1/2018	Null	
	EQUI 116	Null	Battery TerminalPost Coater 30	Water Gremlin	Custom	16.3	pounds/hours	Solvents	1/1/2020	1/1/2020	Null	
	EQUI 117	Null	South Building R&D Coater	Water Gremlin	Custom	0.41	pounds/hours	Coating	2/15/2022	2/15/2022	Null	
	EQUI 172	Null	Battery TerminalPost Coater 29	Water Gremlin	Custom	43.5	pounds/hours	Solvents	4/16/2020	4/16/2020	Null	
	EQUI 219	Null	Battery TerminalPost Coater 33	Water Gremlin	Custom/UV	7.92	pounds/hours	Coating	2/16/2006	2/16/2006	Null	
	EQUI 220	Null	Battery TerminalPost Coater 34	Water Gremlin	Custom/UV	7.92	pounds/hours	Coating	2/16/2006	2/16/2006	Null	
	EQUI 233	Null	Battery TerminalPost Coater 19	Water Gremlin	Custom	1.71	pounds/hours	Coating	1/1/2012	1/1/2012	1/12/2022	
	EQUI 240	Null	Prototype Coater	Water Gremlin	Custom	7.92	pounds/hours	Coating	2/15/2022	2/15/2022	Null	
Sub-slab Depressurization System	EQUI 167	Null	Solvent Vapor Remediation System	H2K Technologies	Null	Null	Null	Null	Null	Null	Null	

Component Groups

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

Subject Item ID	Delta Designation	Description	Group Member ID	
COMG 1	GP001	VOC and 1,2 (trans) Dichloroethylene Limits and VOC Coater, Water-Based Coater, UV Coater, and Solvent Distillation Operation Requirements.	EQUI 82	
			EQUI 84	
			EQUI 85	
			EQUI 87	
			EQUI 88	
			EQUI 89	
			EQUI 92	
			EQUI 93	
			EQUI 94	
			EQUI 95	
			EQUI 97	
			EQUI 98	
			EQUI 99	
			EQUI 100	
			EQUI 116	
			EQUI 117	
			EQUI 166	
			EQUI 172	
			EQUI 173	
			EQUI 174	
			EQUI 176	
			EQUI 233	
			EQUI 240	
COMG 2	GP002	PM10 and PM2.5: Limits and Compliance Requirements for Ultraviolet (UV) Battery Terminal Post Coaters	EQUI 82	
			EQUI 84	
			EQUI 117	
			EQUI 219	
			EQUI 220	
			EQUI 240	
COMG 4	Null	PM10 and PM2.5: Limits and Compliance Requirements for VOC Spray Battery Te..	EQUI 88	
			EQUI 95	
COMG 5	Null	Permanent Total Enclosure Requirements: Coating Rooms	EQUI 82	
			EQUI 84	
			EQUI 85	
			EQUI 87	
			EQUI 88	

			EQUI 89	
			EQUI 92	

Component Groups

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

Subject Item ID	Delta Designation	Description	Group Member ID	
COMG 5	Null	Permanent Total Enclosure Requirements: Coating Rooms	EQUI 93	
			EQUI 94	
			EQUI 95	
			EQUI 97	
			EQUI 98	
			EQUI 99	
			EQUI 100	
			EQUI 166	
			EQUI 168	
			EQUI 169	
			EQUI 170	
			EQUI 171	
			EQUI 173	
			EQUI 219	
			EQUI 220	
COMG 6	Null	Indirect Heating Equipment Rule Requirements	EQUI 101	
			EQUI 102	
			EQUI 103	
			EQUI 104	
COMG 7	Null	Industrial Process Equipment Rule Requirements	EQUI 82	
			EQUI 84	
			EQUI 88	
			EQUI 95	
			EQUI 113	
			EQUI 114	
			EQUI 115	
			EQUI 117	
			EQUI 121	
			EQUI 122	
			EQUI 123	
			EQUI 124	
			EQUI 125	
			EQUI 126	
			EQUI 127	
			EQUI 128	
			EQUI 129	

			EQUI 130	
			EQUI 131	

Component Groups

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

Subject Item ID	Delta Designation	Description	Group Member ID	
COMG 7	Null	Industrial Process Equipment Rule Requirements	EQUI 132	
			EQUI 133	
			EQUI 134	
			EQUI 135	
			EQUI 136	
			EQUI 137	
			EQUI 138	
			EQUI 139	
			EQUI 140	
			EQUI 141	
			EQUI 142	
			EQUI 143	
			EQUI 146	
			EQUI 147	
			EQUI 149	
			EQUI 150	
			EQUI 152	
			EQUI 153	
			EQUI 154	
			EQUI 155	
			EQUI 156	
			EQUI 157	
			EQUI 158	
			EQUI 160	
			EQUI 205	
			EQUI 206	
			EQUI 221	
			EQUI 222	
			EQUI 223	
			EQUI 224	
			EQUI 225	
			EQUI 226	
			EQUI 227	
			EQUI 228	
			EQUI 229	
			EQUI 230	

			EQUI 231	
			EQUI 232	

Component Groups

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

Subject Item ID	Delta Designation	Description	Group Member ID	
COMG 7	Null	Requirements	EQUI 240	
COMG 8	Null	PM10 and PM2.5: Limits and Compliance Requirements for Water-Based Spray B..	EQUI 88	
			EQUI 95	
COMG 9	Null	Sub-Slab Vapor Mitigation System: Operation Requirements	EQUI 167	
			TREA 50	
			TREA 51	
COMG 10	Null	NOx: North Building Space Heating Capacity and Operation Limits	EQUI 177	
			EQUI 178	
			EQUI 179	
			EQUI 180	
			EQUI 181	
			EQUI 182	
			EQUI 183	
			EQUI 184	
			EQUI 185	
			EQUI 186	
			EQUI 187	
			EQUI 188	
			EQUI 189	
			EQUI 190	
			EQUI 191	
			EQUI 192	
			EQUI 193	
			EQUI 194	
			EQUI 195	
			EQUI 196	
			EQUI 197	
			EQUI 198	
			EQUI 199	
			EQUI 200	
			EQUI 201	
			EQUI 202	
			EQUI 203	
			EQUI 204	
			EQUI 205	
			EQUI 206	

			EQUI 207	
COMG 11	Null	Nederman Filter and Smog Hog Control	TREA 1	

Component Groups

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

Subject Item ID	Delta Designation	Description	Group Member ID	
COMG 11	Null	Equipment Train – Melt Pots	TREA 60	
COMG 12	Null	Nederman Filter and Smog Hog Control Equipment Train - Die Casting	TREA 25	
			TREA 26	
			TREA 27	
			TREA 30	
			TREA 33	
			TREA 34	
			TREA 35	
			TREA 36	
			TREA 39	
			TREA 40	
			TREA 41	
			TREA 42	
			TREA 43	
			TREA 61	
			TREA 62	
			TREA 63	
			TREA 64	
			TREA 65	
			TREA 66	
			TREA 67	
			TREA 68	
			TREA 69	
			TREA 70	
			TREA 71	
			TREA 72	
			TREA 73	
			TREA 74	
			TREA 75	
			TREA 76	
			TREA 77	
			TREA 78	
			TREA 79	
COMG 13	Null	Direct Heating Equipment Rule Requirements	EQUI 106	
			EQUI 107	
			EQUI 108	

			EQUI 109	
			EQUI 110	

Component Groups

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

Subject Item ID	Delta Designation	Description	Group Member ID	
COMG 13	Null	Direct Heating Equipment Rule Requirements	EQUI 111	
			EQUI 112	
			EQUI 177	
			EQUI 178	
			EQUI 179	
			EQUI 180	
			EQUI 181	
			EQUI 182	
			EQUI 183	
			EQUI 184	
			EQUI 185	
			EQUI 186	
			EQUI 187	
			EQUI 188	
			EQUI 189	
			EQUI 190	
			EQUI 191	
			EQUI 192	
			EQUI 193	
			EQUI 194	
			EQUI 195	
			EQUI 196	
			EQUI 197	
			EQUI 198	
			EQUI 199	
			EQUI 200	
			EQUI 201	
			EQUI 202	
			EQUI 203	
			EQUI 204	
			EQUI 205	
			EQUI 206	
			EQUI 207	
			EQUI 208	
			EQUI 209	
			EQUI 210	

			EQUI 211	
			EQUI 212	

Component Groups

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

Subject Item ID	Delta Designation	Description	Group Member ID	
COMG 13	Null	Direct Heating Equipment Rule Requirements	EQUI 213	
			EQUI 214	
			EQUI 215	
			EQUI 216	
			EQUI 217	
			EQUI 218	
			EQUI 222	
COMG 14	Null	HEPA Filters - Spray Coaters	TREA 55	
			TREA 56	
			TREA 57	
			TREA 58	
			TREA 59	
COMG 15	Null	NOx: South Building Space Heating Capacity and Operation Limits	EQUI 208	
			EQUI 209	
			EQUI 210	
			EQUI 211	
			EQUI 212	
			EQUI 213	
			EQUI 214	
			EQUI 215	
			EQUI 216	
			EQUI 217	
			EQUI 218	
COMG 16	Null	Die Casting Annual Throughput and Lead Emission Limits	EQUI 121	
			EQUI 122	
			EQUI 123	
			EQUI 124	
			EQUI 125	
			EQUI 126	
			EQUI 127	
			EQUI 128	
			EQUI 129	
			EQUI 130	
			EQUI 131	
			EQUI 132	
			EQUI 133	

			EQUI 134	
			EQUI 135	

Component Groups

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

Subject Item ID	Delta Designation	Description	Group Member ID	
COMG 16	Null	Die Casting Annual Throughput and Lead Emission Limits	EQUI 136	
			EQUI 137	
			EQUI 138	
			EQUI 139	
			EQUI 140	
			EQUI 141	
			EQUI 142	
			EQUI 143	
			EQUI 146	
			EQUI 147	
			EQUI 149	
			EQUI 150	
			EQUI 152	
			EQUI 153	
			EQUI 154	
			EQUI 155	
			EQUI 156	
			EQUI 157	
			EQUI 158	

PTE by SI

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Component Group	Air Component Group	COMG 1	GP001	VOC and 1,2 (trans) Dichlo..	Volatile Organic Compounds			90	
		COMG 10	Null	NOx: North Building Space Heating Capacity and Operation Limits	1,4-Dichlorobenzene (para-)	1.26e-05	5.51e-05	5.51e-05	
					Arsenic compounds	2.1e-06	9.18e-06	9.18e-06	
					Benzene	2.2e-05	9.64e-05	9.64e-05	
					Beryllium	1.26e-07	5.51e-07	5.51e-07	
					Cadmium compounds	1.15e-05	5.05e-05	5.05e-05	
					Carbon Dioxide	1,251	5,478	5,478	
					Carbon Dioxide Equivalent	1,252	5,484	5,484	
					Carbon Monoxide	0.88	3.86	3.86	
					Chromium compounds	1.47e-05	6.43e-05	6.43e-05	
					Cobalt compounds	8.8e-07	3.86e-06	3.86e-06	
					Formaldehyde	0.000786	0.00344	0.00344	
					HAPs - Total	0.02	0.09	0.09	
					Hexane	0.02	0.08	0.08	
					Lead	5.24e-06	2.3e-05	2.3e-05	
					Manganese compounds	3.98e-06	1.74e-05	1.74e-05	
					Mercury	2.73e-06	1.19e-05	1.19e-05	
					Methane	0.0235	0.103	0.103	
					Naphthalene	6.39e-06	2.8e-05	2.8e-05	
					Nickel compounds	2.2e-05	9.64e-05	9.64e-05	
					Nitrogen Oxides	1.05	4.59	4.59	
					Nitrous Oxide	0.00235	0.0103	0.0103	
					Particulate Matter	0.08	0.35	0.35	
					PM < 2.5 micron	0.08	0.35	0.35	
					PM < 10 micron	0.08	0.35	0.35	
					Polycyclic organic matter	9.25e-07	4.05e-06	4.05e-06	
					Selenium compounds	2.52e-07	1.1e-06	1.1e-06	
					Sulfur Dioxide	0.00629	0.03	0.03	
					Toluene	3.56e-05	0.000156	0.000156	
					Volatile Organic Compounds	0.06	0.25	0.25	
		COMG 15	Null	NOx: South Building Space Heating Capacity and Operation Limits	1,4-Dichlorobenzene (para-)	2.7e-06	1.18e-05	1.18e-05	
					Arsenic compounds	4.5e-07	1.97e-06	1.97e-06	
					Benzene	4.72e-06	2.07e-05	2.07e-05	
					Beryllium	2.7e-08	1.18e-07	1.18e-07	
					Cadmium compounds	2.47e-06	1.08e-05	1.08e-05	
					Carbon Dioxide	268	1,175	1,175	
					Carbon Dioxide Equivalent	269	1,176	1,176	
					Carbon Monoxide	0.19	0.83	0.83	
					Chromium compounds	3.15e-07	1.38e-05	1.38e-05	
					Cobalt compounds	1.89e-07	8.27e-07	8.27e-07	
					Formaldehyde	0.000169	0.000738	0.000738	
					HAPs - Total	0.00424	0.02	0.02	
					Hexane	0.00405	0.02	0.02	
					Lead	1.12e-06	4.92e-06	4.92e-06	
					Manganese compounds	8.54e-07	3.74e-06	3.74e-06	
					Mercury	5.84e-07	2.56e-06	2.56e-06	
					Methane	0.00504	0.0221	0.0221	
					Naphthalene	1.37e-06	6.01e-06	6.01e-06	
					Nickel compounds	4.72e-06	2.07e-05	2.07e-05	
					Nitrogen Oxides	0.22	0.98	0.98	
					Nitrous Oxide	0.000504	0.00221	0.00221	
					Particulate Matter	0.02	0.07	0.07	
					PM < 2.5 micron	0.02	0.07	0.07	
					PM < 10 micron	0.02	0.07	0.07	
					Polycyclic organic matter	1.98e-07	8.68e-07	8.68e-07	
					Selenium compounds	5.4e-08	2.36e-07	2.36e-07	
					Sulfur Dioxide	0.00135	0.00591	0.00591	
					Toluene	7.64e-06	3.35e-05	3.35e-05	
					Volatile Organic Compounds	0.01	0.05	0.05	
Equipment	Abrasive Equipment	EQUI 113	Null	Tool room 1 Abrasive Blasting	Lead	1.32e-05	0.0577	5.77e-05	
					Particulate Matter	0.000628	13.75	0.00275	
					PM < 2.5 micron	0.000628	13.75	0.00275	
					PM < 10 micron	0.000628	13.75	0.00275	
		EQUI 114	Null	Tool room 2 Abrasive Blasting	Lead	9.71e-06	0.00971	4.25e-05	
					Particulate Matter	0.000462	10.12	0.00202	
					PM < 2.5 micron	0.000462	10.12	0.00202	
					PM < 10 micron	0.000462	10.12	0.00202	
		EQUI 115	Null	DC Abrasive Blasting	Lead	8.84e-06	0.0387	3.87e-05	
					Particulate Matter	0.00021	9.22	0.000922	
					PM < 2.5 micron	0.000421	9.22	0.00184	
					PM < 10 micron	0.000421	9.22	0.00184	

	Casting Equipment	EQUI 121	Null	Die Cast (DC09)	Lead	6.08e-05	0.02	0.000266	
					Particulate Matter	0.00789	2.17	0.03	
					PM < 2.5 micron	0.00789	2.17	0.03	

PTE by SI

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Equipment	Casting Equipment	EQUI 121	Null	Die Cast (DC09)	PM < 10 micron	0.00789	2.17	0.03	
		EQUI 122	Null	Die Cast (DC12)	Lead	4.08e-05	0.03	0.000179	
					Particulate Matter	0.00531	2.49	0.02	
					PM < 2.5 micron	0.00531	2.49	0.02	
					PM < 10 micron	0.00531	2.49	0.02	
		EQUI 123	Null	Die Cast (DC33)	Lead	8.21e-05	0.03	0.00036	
					Particulate Matter	0.01	2.85	0.05	
					PM < 2.5 micron	0.01	2.85	0.05	
					PM < 10 micron	0.01	2.85	0.05	
		EQUI 124	Null	Die Cast (DC14)	Lead	0.000301	0.01	0.000132	
					Particulate Matter	0.00391	1.24	0.02	
					PM < 2.5 micron	0.00391	1.24	0.02	
					PM < 10 micron	0.00391	1.24	0.02	
		EQUI 125	Null	Die Cast (DC15)	Lead	4.94e-05	0.03	0.000216	
					Particulate Matter	0.00641	2.86	0.03	
					PM < 2.5 micron	0.00641	2.86	0.03	
					PM < 10 micron	0.00641	2.86	0.03	
		EQUI 126	Null	Die Cast (DC21)	Lead	0.000141	0.04	0.000619	
					Particulate Matter	0.02	3.87	0.08	
					PM < 2.5 micron	0.02	3.87	0.08	
					PM < 10 micron	0.02	3.87	0.08	
		EQUI 127	Null	Die Cast (DC08)	Lead	2.23e-05	0.03	9.76e-05	
					Particulate Matter	0.0029	2.47	0.01	
					PM < 2.5 micron	0.0029	2.47	0.01	
					PM < 10 micron	0.0029	2.47	0.01	
		EQUI 128	Null	Die Cast (DC10)	Lead	3.23e-05	0.000141	0.000141	
					Particulate Matter	0.00358	2.17	0.02	
					PM < 2.5 micron	0.00358	2.17	0.02	
					PM < 10 micron	0.00358	2.17	0.02	
		EQUI 129	Null	Die Cast (DC17)	Lead	3.44e-05	0.02	0.000151	
					Particulate Matter	0.00447	2.17	0.02	
					PM < 2.5 micron	0.00447	2.17	0.02	
					PM < 10 micron	0.00447	2.17	0.02	
		EQUI 130	Null	Die Cast (DC18)	Lead	2.96e-05	0.01	0.00013	
					Particulate Matter	0.00384	1.09	0.02	
					PM < 2.5 micron	0.00384	1.09	0.02	
					PM < 10 micron	0.003884	1.09	0.02	
		EQUI 131	Null	Die Cast (DC36)	Lead	0.000169	0.07	0.00074	
					Particulate Matter	0.02	6.36	0.1	
					PM < 2.5 micron	0.02	6.36	0.1	
					PM < 10 micron	0.02	6.36	0.1	
		EQUI 132	Null	Die Cast (DC37)	Lead	5.7e-05	0.05	0.00025	
					Particulate Matter	0.00741	4.28	0.03	
					PM < 2.5 micron	0.00741	4.28	0.03	
					PM < 10 micron	0.00741	4.28	0.03	
		EQUI 133	Null	Die Cast (DC25)	Lead	6.18e-05	0.04	0.000271	
					Particulate Matter	0.0802	3.71	0.04	
					PM < 2.5 micron	0.00802	3.71	0.04	
					PM < 10 micron	0.00802	3.71	0.04	
		EQUI 134	Null	Die Cast (DC22)	Lead	0.000102	0.04	0.000447	
					Particulate Matter	0.01	3.96	0.06	
					PM < 2.5 micron	0.01	3.96	0.06	
					PM < 10 micron	0.01	3.96	0.06	
		EQUI 135	Null	Die Cast (DC35)	Lead	0.000169	0.12	0.000742	
					Particulate Matter	0.02	10.88	0.1	
					PM < 2.5 micron	0.02	10.88	0.1	
					PM < 10 micron	0.02	10.88	0.1	
		EQUI 136	Null	Die Cast (DC32)	Lead	0.000238	0.06	0.00104	
					Particulate Matter	0.03	5.43	0.14	
					PM < 2.5 micron	0.03	5.43	0.14	
					PM < 10 micron	0.03	5.43	0.14	
		EQUI 137	Null	Die Cast (DC26)	Lead	6.39e-05	0.03	0.00028	
					Particulate Matter	0.0083	3.16	0.04	
					PM < 2.5 micron	0.0083	3.16	0.04	
					PM < 10 micron	0.0083	3.16	0.04	
		EQUI 138	Null	Die Cast (DC27)	Lead	0.000148	0.05	0.000648	
					Particulate Matter	0.02	4.08	0.08	
					PM < 2.5 micron	0.02	4.08	0.08	
					PM < 10 micron	0.02	4.08	0.08	
		EQUI 139	Null	Die Cast (DC16)	Lead	0.000159	0.05	0.000696	
					Particulate Matter	0.02	4.64	0.09	

					PM < 2.5 micron	0.02	4.64	0.09	
					PM < 10 micron	0.02	4.64	0.09	
		EQUI 140	Null	Die Cast (DC28)	Lead	0.000124	0.03	0.000543	

PTE by SI

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Equipment	Casting Equipment	EQUI 140	Null	Die Cast (DC28)	Particulate Matter	0.02	3.13	0.07	
					PM < 2.5 micron	0.02	3.13	0.07	
					PM < 10 micron	0.02	3.13	0.07	
		EQUI 141	Null	Die Cast (DC29)	Lead	7.13e-05	0.05	0.000312	
					Particulate Matter	0.00926	4.08	0.04	
					PM < 2.5 micron	0.00926	4.08	0.04	
					PM < 10 micron	0.00926	4.08	0.04	
		EQUI 142	Null	Die Cast (DC19)	Lead	6.58e-05	0.05	0.000288	
					Particulate Matter	0.00854	4.45	0.04	
					PM < 2.5 micron	0.00854	4.45	0.04	
					PM < 10 micron	0.00854	4.45	0.04	
		EQUI 143	Null	Die Cast (DC34)	Lead	0.000117	0.04	0.000513	
					Particulate Matter	0.02	4.01	0.07	
					PM < 2.5 micron	0.02	4.01	0.07	
					PM < 10 micron	0.02	4.01	0.07	
		EQUI 146	Null	Die Cast (DC42)	Lead	0.000319	0.12	0.0014	
					Particulate Matter	0.04	10.88	0.18	
					PM < 2.5 micron	0.04	10.88	0.18	
					PM < 10 micron	0.04	10.88	0.18	
		EQUI 147	Null	Die Cast (DC38)	Lead	0.000319	0.06	0.0014	
					Particulate Matter	0.04	5.43	0.18	
					PM < 2.5 micron	0.04	5.43	0.18	
					PM < 10 micron	0.04	5.43	0.18	
		EQUI 149	Null	Die Cast (DC40)	Lead	0.000102	0.03	0.000446	
					Particulate Matter	0.01	2.86	0.06	
					PM < 2.5 micron	0.01	2.86	0.06	
					PM < 10 micron	0.01	2.86	0.06	
		EQUI 150	Null	Die Cast (DC48)	Lead	0.000163	0.05	0.000715	
					Particulate Matter	0.02	4.78	0.09	
					PM < 2.5 micron	0.02	4.78	0.09	
					PM < 10 micron	0.02	4.78	0.09	
		EQUI 152	Null	Die Cast (DC41)	Lead	6.18e-05	0.07	0.000271	
					Particulate Matter	0.00803	6.36	0.04	
					PM < 2.5 micron	0.00803	6.36	0.04	
					PM < 10 micron	0.00803	6.36	0.04	
		EQUI 153	Null	Die Cast (DC44)	Lead	0.000314	0.04	0.00138	
					Particulate Matter	0.04	3.91	0.18	
					PM < 2.5 micron	0.04	3.91	0.18	
					PM < 10 micron	0.04	3.91	0.18	
		EQUI 154	Null	Die Cast (DC45)	Lead	0.000271	0.11	0.00119	
					Particulate Matter	0.04	9.64	0.15	
					PM < 2.5 micron	0.04	9.64	0.15	
					PM < 10 micron	0.04	9.64	0.15	
		EQUI 155	Null	Die Cast (DC52)	Lead	0.000107	0.05	0.000467	
					Particulate Matter	0.01	4.08	0.06	
					PM < 2.5 micron	0.01	4.06	0.06	
					PM < 10 micron	0.01	4.08	0.06	
		EQUI 156	Null	Die Cast (DC50)	Lead	0.000228	0.05	0.000998	
					Particulate Matter	0.03	4.78	0.13	
					PM < 2.5 micron	0.03	4.78	0.13	
					PM < 10 micron	0.03	4.78	0.13	
		EQUI 157	Null	Die Cast (DC51)	Lead	0.000314	0.09	0.00138	
					Particulate Matter	0.04	8.48	0.18	
					PM < 2.5 micron	0.04	8.48	0.18	
					PM < 10 micron	0.04	8.48	0.18	
		EQUI 158	Null	Die Cast (DC53)	Lead	0.000314	0.05	0.00138	
					Particulate Matter	0.04	4.78	0.18	
					PM < 2.5 micron	0.04	4.78	0.18	
					PM < 10 micron	0.04	4.78	0.18	
		EQUI 160	Null	Billet Saw	Lead	0.00144	0.08	0.00632	
					Particulate Matter	0.00169	0.04	0.00742	
					PM < 2.5 micron	0.00169	0.04	0.00742	
					PM < 10 micron	0.00169	0.04	0.00742	
	Distillation..	EQUI 174	Null	Solvent Distillation Unit	Volatile Organic Compounds	0.23	1.02	1.02	
	Melting Equipment	EQUI 101	Null	CF Scrap Re-Melt Pot	1,4-Dichlorobenzene (para-)	1.76e-06	7.73e-06	7.73e-06	
					Arsenic compounds	2.94e-07	1.29e-06	1.29e-06	
					Benzene	3.09e-06	1.35e-05	1.35e-05	
					Beryllium	1.76e-08	7.73e-08	7.73e-08	
					Cadmium compounds	1.62e-06	7.09e-06	7.09e-06	
					Carbon Dioxide	175.47	768.54	768.54	
					Carbon Dioxide Equivalent	175.65	769.33	769.33	

					Carbon Monoxide	0.12	0.54	0.54	
					Chromium compounds	2.06e-06	9.02e-06	9.02e-06	
					Cobalt compounds	1.24e-07	5.41e-07	5.41e-07	

PTE by SI

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Equipment	Melting Equipment	EQUI 101	Null	CF Scrap Re-Melt Pot	Formaldehyde	0.00011	0.000483	0.000483	
					HAPs - Total	0.00278	0.01	0.01	
					Hexane	0.00265	0.01	0.01	
					Lead	3.23e-05	0.000356	0.000356	
					Manganese compounds	5.59e-07	2.45e-06	2.45e-06	
					Mercury	3.82e-07	1.67e-06	1.67e-06	
					Methane	0.0033	0.0145	0.0145	
					Naphthalene	8.97e-07	3.93e-06	3.93e-06	
					Nickel compounds	3.09e-06	1.35e-05	1.35e-05	
					Nitrogen Oxides	0.15	0.64	0.64	
					Nitrous Oxide	0.00033	0.00145	0.00145	
					Particulate Matter	0.03	1.17	0.08	
					PM < 2.5 micron	0.03	1.18	0.08	
					PM < 10 micron	0.03	1.18	0.08	
					Polycyclic organic matter	1.3e-07	5.68e-07	5.68e-07	
					Selenium compounds	3.53e-08	1.55e-07	1.55e-07	
					Sulfur Dioxide	0.000882	0.00386	0.00386	
					Toluene	5e-06	2.19e-05	2.19e-05	
					Volatile Organic Compounds	0.00809	0.04	0.04	
		EQUI 102	Null	Small Re-Melt Pot	1,4-Dichlorobenzene (para-)	4.12e-08	1.8e-07	1.8e-07	
					Arsenic compounds	9.8e-08	4.29e-07	4.29e-07	
					Benzene	1.03e-06	4.51e-06	4.51e-06	
					Beryllium	5.88e-09	2.58e-08	2.58e-08	
					Cadmium compounds	5.39e-07	2.36e-06	2.36e-06	
					Carbon Dioxide	58.49	256.18	256.18	
					Carbon Dioxide Equivalent	58.55	256.44	256.44	
					Carbon Monoxide	0.04	0.18	0.18	
					Chromium compounds	6.86e-07	3.01e-06	3.01e-06	
					Cobalt compounds	4.12e-08	1.8e-07	1.8e-07	
					Formaldehyde	3.68e-05	0.000161	0.000161	
					HAPs - Total	0.000925	0.00405	0.00405	
					Hexane	0.000882	0.00386	0.00386	
					Lead	1.78e-05	0.000143	2.04e-05	
					Manganese compounds	1.86e-07	8.16e-07	8.16e-07	
					Mercury	1.27e-07	5.58e-07	5.58e-07	
					Methane	0.0011	0.00482	0.00482	
					Naphthalene	2.29e-07	1.31e-06	1.31e-06	
					Nickel compounds	1.03e-06	4.51e-06	4.51e-06	
					Nitrogen Oxides	0.05	0.21	0.21	
					Nitrous Oxide	0.00011	0.000482	0.000482	
					Particulate Matter	0.01	0.39	0.03	
					PM < 2.5 micron	0.01	0.39	0.08	
					PM < 10 micron	0.01	0.39	0.08	
					Polycyclic organic matter	4.32e-08	1.89e-07	1.89e-07	
					Selenium compounds	1.18e-08	5.15e-08	5.15e-08	
					Sulfur Dioxide	0.000294	0.00129	0.00129	
					Toluene	1.67e-06	7.3e-06	7.3e-06	
					Volatile Organic Compounds	0.0027	0.01	0.01	
		EQUI 103	Null	Doe Run Melt Pot	1,4-Dichlorobenzene (para-)	5.88e-07	2.58e-06	2.58e-06	
					Beryllium	5.88e-09	2.58e-08	2.58e-08	
					Cadmium compounds	5.39e-07	2.36e-06	2.36e-06	
					Carbon Dioxide	58.49	256.18	256.18	
					Carbon Dioxide Equivalent	58.55	256.44	256.44	
					Carbon Monoxide	0.04	0.18	0.18	
					Chromium compounds	6.86e-07	3.01e-06	3.01e-06	
					Cobalt compounds	4.12e-08	1.8e-07	1.8e-07	
					Formaldehyde	3.68e-05	0.000161	0.000161	
					HAPs - Total	0.000925	0.00405	0.00405	
					Hexane	0.000882	0.00386	0.00386	
					Lead	4.49e-06	0.000166	2.36e-05	
					Manganese compounds	1.86e-07	8.16e-07	8.16e-07	
					Mercury	1.27e-07	5.58e-07	5.58e-07	
					Methane	0.0011	0.00482	0.00482	
					Naphthalene	2.99e-07	1.31e-06	1.31e-06	
					Nickel compounds	1.03e-06	4.51e-06	4.51e-06	
					Nitrogen Oxides	0.05	0.21	0.21	
					Nitrous Oxide	0.00011	0.000482	0.000482	
					Particulate Matter	0.00615	0.45	0.03	
					PM < 2.5 micron	0.00617	0.45	0.03	
					PM < 10 micron	0.00617	0.45	0.03	
					Polycyclic organic matter	4.32e-08	1.89e-07	1.89e-07	

					Selenium compounds	1.18e-08	5.15e-08	5.15e-08	
					Sulfur Dioxide	0.000294	0.00129	0.00129	
					Toluene	1.67e-06	7.3e-06	7.3e-06	

PTE by SI

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Equipment	Melting Equipment	EQUI 103	Null	Doe Run Melt Pot	Volatile Organic Compounds	0.0027	0.01	0.01	
		EQUI 104	Null	CF Re-Melt Pot	1,4-Dichlorobenzene (para-)	4e-07	1.75e-06	1.75e-06	
					Arsenic compounds	6.67e-08	2.92e-07	2.92e-07	
					Benzene	7e-07	3.07e-06	3.07e-06	
					Beryllium	4e-09	1.75e-08	1.75e-08	
					Cadmium compounds	3.67e-07	1.61e-06	1.61e-06	
					Carbon Dioxide	39.77	174.2	174.2	
					Carbon Dioxide Equivalent	39.81	174.38	174.38	
					Carbon Monoxide	0.03	0.12	0.12	
					Chromium compounds	4.67e-07	2.04e-06	2.04e-06	
					Cobalt compounds	2.8e-08	1.23e-07	1.23e-07	
					Formaldehyde	2.5e-05	0.00011	0.00011	
					HAPs - Total	0.000629	0.00276	0.00276	
					Hexane	0.0006	0.00263	0.00263	
					Lead	7.05e-05	0.000937	0.000129	
					Manganese compounds	1.27e-07	5.55e-07	5.55e-07	
					Mercury	8.67e-08	3.8e-07	3.8e-07	
					Methane	0.000748	0.00328	0.00328	
					Naphthalene	2.03e-07	8.91e-07	8.91e-07	
					Nickel compounds	7e-07	3.07e-06	3.07e-06	
					Nitrogen Oxides	0.03	0.15	0.15	
					Nitrous Oxide	7.48e-05	0.000328	0.000328	
					Particulate Matter	0.04	2.47	0.08	
					PM < 2.5 micron	0.04	2.5	0.09	
					PM < 10 micron	0.04	2.5	0.09	
					Polycyclic organic matter	2.94e-08	1.29e-07	1.29e-07	
					Selenium compounds	8e-09	3.5e-08	3.5e-08	
					Sulfur Dioxide	0.0002	0.000876	0.000876	
					Toluene	1.13e-06	4.96e-06	4.96e-06	
					Volatile Organic Compounds	0.00183	0.00803	0.00803	
		EQUI 221	Null	Tin Melt Pot	Particulate Matter	0.03	0.00842	0.000252	
					PM < 2.5 micron	0.03	0.00851	0.000255	
					PM < 10 micron	0.03	0.00851	0.000255	
	Other Combustion	EQUI 106	Null	Make-up Air Unit 1N	1,4-Dichlorobenzene (para-)	2.94e-06	1.29e-05	1.29e-05	
					Beryllium	2.94e-08	1.29e-07	1.29e-07	
					Cadmium compounds	2.7e-06	1.18e-05	1.18e-05	
					Carbon Dioxide	292.44	1,280.9	1,280.9	
					Carbon Dioxide Equivalent	293	1,282	1,282	
					Carbon Monoxide	0.21	0.9	0.9	
					Chromium compounds	3.43e-06	1.5e-05	1.5e-05	
					Cobalt compounds	2.06e-07	9.02e-07	9.02e-07	
					Formaldehyde	0.000184	0.000805	0.000805	
					HAPs - Total	0.00463	0.02	0.02	
					Hexane	0.00441	0.02	0.02	
					Manganese compounds	9.31e-07	4.08e-06	4.08e-06	
					Mercury	9.63e-07	2.79e-06	2.79e-06	
					Methane	0.0055	0.02	0.02	
					Naphthalene	1.5e-06	6.55e-06	6.55e-06	
					Nickel compounds	5.15e-06	2.25e-05	2.25e-05	
					Nitrogen Oxides	0.25	1.07	1.07	
					Nitrous Oxide	0.00055	0.00241	0.00241	
					Particulate Matter	0.02	0.08	0.08	
					PM < 2.5 micron	0.02	0.08	0.08	
					PM < 10 micron	0.02	0.08	0.08	
					Polycyclic organic matter	2.16e-07	9.47e-07	9.47e-07	
					Selenium compounds	5.88e-08	2.58e-07	2.58e-07	
					Sulfur Dioxide	0.00147	0.00644	0.00644	
					Toluene	8.33e-06	3.65e-05	3.65e-05	
					Volatile Organic Compounds	0.01	0.06	0.06	
		EQUI 107	Null	Make-up Air Unit 2N	1,4-Dichlorobenzene (para-)	7.12e-06	3.12e-05	3.12e-05	
					Arsenic compounds	1.19e-06	5.2e-06	5.2e-06	
					Benzene	1.25e-05	5.46e-05	5.46e-05	
					Beryllium	7.12e-08	3.12e-07	3.12e-07	
					Cadmium compounds	6.52e-06	2.86e-05	2.86e-05	
					Carbon Dioxide	707.71	3,099.78	3,099.78	
					Carbon Dioxide Equivalent	708	3,103	3,103	
					Carbon Monoxide	0.5	2.18	2.18	
					Chromium compounds	8.3e-06	3.64e-05	3.64e-05	
					Cobalt compounds	4.98e-07	2.18e-06	2.18e-06	
					Formaldehyde	0.000445	0.00195	0.00195	
					HAPs - Total	0.01	0.05	0.05	

					Hexane	0.01	0.05	0.05	
					Manganese compounds	2.25e-06	9.87e-06	9.87e-06	
					Mercury	1.54e-06	6.75e-06	6.75e-06	

PTE by SI

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Equipment	Other Combustion	EQUI 107	Null	Make-up Air Unit 2N	Methane	0.01	0.06	0.06	
					Naphthalene	3.62e-06	1.58e-05	1.58e-05	
					Nickel compounds	1.25e-05	5.46e-05	5.46e-05	
					Nitrogen Oxides	0.59	2.6	2.6	
					Nitrous Oxide	0.00133	0.00583	0.00583	
					Particulate Matter	0.05	0.2	0.2	
					PM < 2.5 micron	0.05	0.2	0.2	
					PM < 10 micron	0.05	0.2	0.2	
					Polycyclic organic matter	5.23e-07	2.29e-06	2.29e-06	
					Selenium compounds	1.42e-07	6.24e-07	6.24e-07	
					Sulfur Dioxide	0.00356	0.02	0.02	
					Toluene	2.02e-05	8.83e-05	8.83e-05	
					Volatile Organic Compounds	0.03	0.14	0.14	
		EQUI 108	Null	Make-up Air Unit 3N	1,4-Dichlorobenzene (para-)	6.6e-06	2.89e-05	2.89e-05	
					Arsenic compounds	1.1e-06	4.82e-06	4.82e-06	
					Benzene	1.15e-05	5.06e-05	5.06e-05	
					Beryllium	6.6e-08	2.89e-07	2.89e-07	
					Cadmium compounds	6.05e-06	2.65e-05	2.65e-05	
					Carbon Dioxide	656.09	2,873.67	2,873.67	
					Carbon Dioxide Equivalent	657	2,877	2,877	
					Carbon Monoxide	0.46	2.02	2.02	
					Chromium compounds	7.7e-06	3.37e-05	3.37e-05	
					Cobalt compounds	4.62e-07	2.02e-06	2.02e-06	
					Formaldehyde	0.000412	0.00181	0.00181	
					HAPs - Total	0.01	0.05	0.05	
					Hexane	0.0099	0.04	0.04	
					Manganese compounds	2.09e-06	9.15e-06	9.15e-06	
					Mercury	1.43e-06	6.26e-06	6.26e-06	
					Methane	0.01	0.05	0.05	
					Naphthalene	3.35e-06	1.47e-05	1.47e-05	
					Nickel compounds	1.15e-05	5.06e-05	5.06e-05	
					Nitrogen Oxides	0.55	2.41	2.41	
					Nitrous Oxide	0.00123	0.0054	0.0054	
					Particulate Matter	0.04	0.18	0.18	
					PM < 2.5 micron	0.04	0.18	0.18	
					PM < 10 micron	0.04	0.18	0.18	
					Polycyclic organic matter	4.85e-07	2.12e-06	2.12e-06	
					Selenium compounds	1.32e-07	5.78e-07	5.78e-07	
					Sulfur Dioxide	0.0033	0.01	0.01	
					Toluene	1.87e-05	8.19e-05	8.19e-05	
					Volatile Organic Compounds	0.03	0.13	0.13	
		EQUI 109	Null	Make-up Air Unit 5N	1,4-Dichlorobenzene (para-)	5.82e-06	2.55e-05	2.55e-05	
					Beryllium	5.82e-08	2.55e-07	2.55e-07	
					Cadmium compounds	5.34e-06	2.34e-05	2.34e-05	
					Carbon Dioxide	579.04	2,536.18	2,536.18	
					Carbon Dioxide Equivalent	580	2,539	2,539	
					Carbon Monoxide	0.41	1.79	1.79	
					Chromium compounds	6.79e-06	2.98e-05	2.98e-05	
					Cobalt compounds	4.08e-07	1.79e-06	1.79e-06	
					Formaldehyde	0.000364	0.00159	0.00159	
					HAPs - Total	0.00916	0.04	0.04	
					Hexane	0.00874	0.04	0.04	
					Manganese compounds	1.84e-06	8.08e-06	8.08e-06	
					Mercury	1.26e-06	5.53e-06	5.53e-06	
					Methane	0.01	0.05	0.05	
					Naphthalene	2.96e-06	1.3e-05	1.3e-05	
					Nickel compounds	1.02e-05	4.46e-05	4.46e-05	
					Nitrogen Oxides	0.49	2.13	2.13	
					Nitrous Oxide	0.00109	0.00477	0.00477	
					Particulate Matter	0.04	0.16	0.16	
					PM < 2.5 micron	0.04	16	0.16	
					PM < 10 micron	0.04	0.16	0.16	
					Polycyclic organic matter	4.28e-07	1.87e-06	1.87e-06	
					Selenium compounds	1.16e-07	5.1e-07	5.1e-07	
					Sulfur Dioxide	0.00291	0.01	0.01	
					Toluene	1.65e-05	7.23e-05	7.23e-05	
					Volatile Organic Compounds	0.03	0.12	0.12	
		EQUI 110	Null	Make-up Air Unit 6N	1,4-Dichlorobenzene (para-)	6.35e-06	2.78e-05	2.78e-05	
					Arsenic compounds	1.06e-06	4.64e-06	4.64e-06	
					Benzene	1.11e-05	4.87e-05	4.87e-05	
					Beryllium	6.35e-08	2.78e-07	2.78e-07	

					Cadmium compounds	5.82e-06	2.55e-05	2.55e-05	
					Carbon Dioxide	631.68	2,766.74	2,766.74	
					Carbon Dioxide Equivalent	632	2,770	2,770	

PTE by SI

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Equipment	Other Combustion	EQUI 110	Null	Make-up Air Unit 6N	Carbon Monoxide	0.44	1.95	1.95	
					Chromium compounds	7.41e-06	3.25e-05	3.25e-05	
					Cobalt compounds	4.45e-07	1.95e-06	1.95e-06	
					Formaldehyde	0.000397	0.00174	0.00174	
					HAPs - Total	0.01	0.04	0.04	
					Hexane	0.00953	0.04	0.04	
					Manganese compounds	2.01e-06	8.81e-06	8.81e-06	
					Mercury	1.38e-06	6.03e-06	6.03e-06	
					Methane	0.01	0.05	0.05	
					Naphthalene	3.23e-06	1.41e-05	1.41e-05	
					Nickel compounds	1.11e-05	4.87e-05	4.87e-05	
					Nitrogen Oxides	0.53	2.32	2.32	
					Nitrous Oxide	0.00119	0.0052	0.0052	
					Particulate Matter	0.04	0.18	0.18	
					PM < 2.5 micron	0.04	0.18	0.18	
					PM < 10 micron	0.04	0.18	0.18	
					Polycyclic organic matter	4.67e-07	2.05e-06	2.05e-06	
					Selenium compounds	1.27e-07	5.57e-07	5.57e-07	
					Sulfur Dioxide	0.00318	0.01	0.01	
					Toluene	1.8e-05	7.88e-05	7.88e-05	
					Volatile Organic Compounds	0.03	0.13	0.13	
		EQUI 111	Null	Make-up Air Unit 9N	1,4-Dichlorobenzene (para-)	2.58e-06	1.13e-05	1.13e-05	
					Arsenic compounds	4.3e-07	1.89e-06	1.89e-06	
					Benzene	4.52e-06	1.98e-05	1.98e-05	
					Beryllium	2.58e-08	1.13e-07	1.13e-07	
					Cadmium compounds	2.37e-06	1.04e-05	1.04e-05	
					Carbon Dioxide	256.82	1,124.89	1,124.89	
					Carbon Dioxide Equivalent	257	1,124.89	1,124.89	
					Carbon Monoxide	0.18	0.79	0.79	
					Chromium compounds	3.01e-06	1.32e-05	1.32e-05	
					Cobalt compounds	1.81e-07	7.92e-07	7.92e-07	
					Formaldehyde	0.000161	0.000707	0.000707	
					HAPs - Total	0.00406	0.0178	0.0178	
					Hexane	0.00387	0.017	0.017	
					Lead	1.08e-06	4.71e-06	4.71e-06	
					Manganese compounds	8.18e-07	3.58e-06	3.58e-06	
					Mercury	5.6e-07	2.45e-06	2.45e-06	
					Methane	0.00483	0.02	0.02	
					Naphthalene	1.31e-06	5.75e-06	5.75e-06	
					Nickel compounds	4.52e-06	1.98e-05	1.98e-05	
					Nitrogen Oxides	0.22	0.94	0.94	
					Nitrous Oxide	0.000483	0.00212	0.00212	
					Particulate Matter	0.02	0.07	0.07	
					PM < 2.5 micron	0.02	0.07	0.07	
					PM < 10 micron	0.02	0.07	0.07	
					Polycyclic organic matter	1.9e-07	8.32e-07	8.32e-07	
					Selenium compounds	5.17e-08	2.26e-07	2.26e-07	
					Sulfur Dioxide	0.00129	0.00566	0.00566	
					Toluene	7.32e-06	3.21e-05	3.21e-05	
					Volatile Organic Compounds	0.01	0.05	0.05	
		EQUI 112	Null	Make-up Air Unit 11N	1,4-Dichlorobenzene (para-)	5.42e-06	2.37e-05	2.37e-05	
					Arsenic compounds	9.03e-07	3.96e-06	3.96e-06	
					Benzene	9.49e-06	4.15e-05	4.15e-05	
					Beryllium	5.42e-08	2.37e-07	2.37e-07	
					Cadmium compounds	4.97e-06	2.18e-05	2.18e-05	
					Carbon Dioxide	538.94	2,360.58	2,360.58	
					Carbon Dioxide Equivalent	539	2,363	2,363	
					Carbon Monoxide	0.38	1.66	1.66	
					Chromium compounds	6.35e-06	2.77e-05	2.77e-05	
					Cobalt compounds	3.79e-07	1.66e-06	1.66e-06	
					Formaldehyde	0.000339	0.00148	0.00148	
					HAPs - Total	0.00853	0.0373	0.0373	
					Hexane	0.00813	0.0356	0.0356	
					Lead	2.26e-06	9.89e-06	9.89e-06	
					Manganese compounds	1.72e-06	7.52e-06	7.52e-06	
					Mercury	1.17e-06	5.14e-06	5.14e-06	
					Methane	0.01	0.04	0.04	
					Naphthalene	2.76e-06	1.21e-05	1.21e-05	
					Nickel compounds	9.49e-06	4.15e-05	4.15e-05	
					Nitrogen Oxides	0.45	1.98	1.98	
					Nitrous Oxide	0.00101	0.00444	0.00444	

					Particulate Matter	0.03	0.15	0.15	
					PM < 2.5 micron	0.03	0.15	0.15	
					PM < 10 micron	0.03	0.15	0.15	

PTE by SI

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Equipment	Other Combustion	EQUI 112	Null	Make-up Air Unit 11N	Polycyclic organic matter	3.98e-07	1.74e-06	1.74e-06	
					Selenium compounds	1.08e-07	4.75e-07	4.75e-07	
					Sulfur Dioxide	0.00271	0.01	0.01	
					Toluene	1.54e-05	6.73e-05	6.73e-05	
					Volatile Organic Compounds	0.02	0.11	0.11	
		EQUI 222	Null	Natural Gas Bake Oven	1,4-Dichlorobenzene (para-)	3.53e-07	1.55e-06	1.55e-06	
					Arsenic compounds	5.88e-08	2.58e-07	2.58e-07	
					Benzene	6.18e-07	2.71e-06	2.71e-06	
					Beryllium	3.53e-09	1.55e-08	1.55e-08	
					Cadmium compounds	3.24e-07	1.42e-06	1.42e-06	
					Carbon Dioxide	35.09	153.71	153.71	
					Carbon Dioxide Equivalent	35.13	153.87	153.87	
					Carbon Monoxide	0.02	0.11	0.1111	
					Chromium compounds	4.12e-07	1.8e-06	1.8e-06	
					Cobalt compounds	247	1.08e-07	1.08e-07	
					Formaldehyde	2.21e-05	9.66e-05	9.66e-05	
					HAPs - Total	0.000555	0.00243	0.00243	
					Hexane	0.000529	0.00232	0.00232	
					Lead	1.47e-07	6.44e-07	6.44e-07	
					Manganese compounds	1.12e-07	4.9e-07	4.9e-07	
					Mercury	7.65e-08	3.35e-07	3.35e-07	
					Methane	0.00066	0.00289	0.00289	
					Naphthalene	1.79e-07	7.86e-07	7.86e-07	
					Nickel compounds	6.18e-07	2.71e-06	2.71e-06	
					Nitrogen Oxides	0.03	0.13	0.13	
					Nitrous Oxide	6.6e-05	0.000289	0.000289	
					Particulate Matter	0.00224	0.00979	0.00979	
					PM < 2.5 micron	0.00224	0.00979	0.00979	
					PM < 10 micron	0.00224	0.00979	0.00979	
					Polycyclic organic matter	2.59e-08	1.14e-07	1.14e-07	
					Selenium compounds	7.06e-09	3.09e-08	3.09e-08	
					Sulfur Dioxide	0.000176	0.000773	0.000773	
					Toluene	1e-06	4.38e-06	4.38e-06	
					Volatile Organic Compounds	0.00162	0.00709	0.00709	
	Other Emission Unit	EQUI 223	Null	Coining Booth 1	Particulate Matter	0.00318	0.01	0.01	
					PM < 2.5 micron	0.00318	0.01	0.01	
					PM < 10 micron	0.00318	0.01	0.01	
		EQUI 228	Null	Coining Booth 6	Particulate Matter	0.00358	0.02	0.02	
					PM < 2.5 micron	0.00358	0.02	0.02	
					PM < 10 micron	0.00358	0.02	0.02	
		EQUI 229	Null	Coining Booth 7	Particulate Matter	0.003	0.01	0.01	
					PM < 2.5 micron	0.003	0.01	0.01	
					PM < 10 micron	0.003	0.01	0.01	
		EQUI 230	Null	Coining Booth 8	Particulate Matter	0.00456	0.02	0.02	
					PM < 2.5 micron	0.00456	0.02	0.02	
					PM < 10 micron	0.00456	0.02	0.02	
		EQUI 231	Null	Coining Booth 9	Particulate Matter	0.01	0.05	0.05	
					PM < 2.5 micron	0.01	0.05	0.05	
					PM < 10 micron	0.01	0.05	0.05	
		EQUI 232	Null	Coining Booth 10	Particulate Matter	0.00797	0.03	0.03	
					PM < 2.5 micron	0.00797	0.03	0.03	
					PM < 10 micron	0.00797	0.03	0.03	
	Reciprocating IC Engine	EQUI 120	Null	Emergency Generator Engine	1,3-Butadiene	2.28e-05	5.7e-06	5.7e-06	
					Acetaldehyde	0.000447	0.000112	0.000112	
					Benzene	0.000544	0.000136	0.000136	
					Carbon Dioxide	95.06	23.76	23.76	
					Carbon Dioxide Equivalent	95	24	24	
					Carbon Monoxide	0.53	0.13	0.13	
					Formaldehyde	0.000688	0.000172	0.000172	
					HAPs - Total	0.00371	0.000927	0.000927	
					Methane	0.00386	0.000964	0.000964	
					Naphthalene	5.06e-05	1.27e-05	1.27e-05	
					Nitrogen Oxides	2.48	0.62	0.62	
					Nitrous Oxide	0.000771	0.000193	0.000193	
					Particulate Matter	0.18	0.04	0.04	
					PM < 2.5 micron	0.18	0.04	0.04	
					PM < 10 micron	0.18	0.04	0.04	
					Sulfur Dioxide	0.16	0.04	0.04	
					Toluene	0.000238	5.96e-05	5.96e-05	
					Volatile Organic Compounds	0.2	0.05	0.05	
					Xylenes, Total	0.000166	4.15e-05	4.15e-05	

	Solvent	EQUI 166	Null	Coating Room Bulk Solven..	Volatile Organic Compounds	4.55	19.94	0	
	Equipment	EQUI 173	Null	Coating Room Soaker Tank	Volatile Organic Compounds	4.73	20.73	0	
	Spray Booth/	EQUI 82	Null	Battery Terminal Post	Particulate Matter	0.00247	0.01	0.01	

PTE by SI

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Equipment	Spray Booth/ Coating Line	EQUI 82	Null	Battery Terminal Post Coater 6	PM < 2.5 micron	0.00247	0.01	0.01	
					PM < 10 micron	0.00247	0.01	0.01	
					Volatile Organic Compounds	0.00454	0.02	0	
		EQUI 84	Null	Battery Terminal Post Coater 9	Particulate Matter	2.47e-05	0.01	0.000108	
					PM < 2.5 micron	2.47e-05	0.01	0.000108	
					PM < 10 micron	2.47e-05	0.01	0.000108	
					Volatile Organic Compounds	0.00454	0.02	0	
		EQUI 85	Null	Battery Terminal Post Co..	Volatile Organic Compounds	0.00125	0.00548	0	
		EQUI 87	Null	Battery Terminal Post Co..	Volatile Organic Compounds	11.92	52.22	0	
		EQUI 88	Null	Battery Terminal Post Coater 15	Particulate Matter	0.004	1.75	0.02	
					PM < 2.5 micron	0.004	1.75	0.02	
					PM < 10 micron	0.004	1.75	0.02	
					Volatile Organic Compounds	4.26	18.65	0	
		EQUI 89	Null	Battery Terminal Post Co..	Volatile Organic Compounds	0.0011	0.00482	0	
		EQUI 92	Null	Battery Terminal Post Co..	Volatile Organic Compounds	0.00112	0.00489	0	
		EQUI 93	Null	Battery Terminal Post Co..	Volatile Organic Compounds	59.62	261.15	0	
		EQUI 94	Null	Battery Terminal Post Co..	Volatile Organic Compounds	13.52	59.24	0	
		EQUI 95	Null	Battery Terminal Post Coater 23	Particulate Matter	0.00199	0.87	0.00871	
					PM < 2.5 micron	0.00199	0.87	0.00871	
					PM < 10 micron	0.00199	0.87	0.00871	
					Volatile Organic Compounds	2.12	9.28	0	
		EQUI 97	Null	Battery Terminal Post Co..	Volatile Organic Compounds	0.000298	0.0013	0	
		EQUI 98	Null	Battery Terminal Post Co..	Volatile Organic Compounds	1.83	8.01	0	
		EQUI 99	Null	Battery Terminal Post Co..	Volatile Organic Compounds	15.71	68.8	0	
		EQUI 100	Null	Battery Terminal Post Co..	Volatile Organic Compounds	3.46	15.16	0	
		EQUI 116	Null	Battery Terminal Post Co..	Volatile Organic Compounds	0.000924	0.00405	0	
		EQUI 117	Null	South Building R&D Coater	Particulate Matter	0.00124	0.00542	0.00542	
					PM < 2.5 micron	0.00124	0.00542	0.00542	
					PM < 10 micron	0.00124	0.00542	0.00542	
					Volatile Organic Compounds	0.00227	0.00994	0	
		EQUI 172	Null	Battery Terminal Post Co..	Volatile Organic Compounds	0.00247	0.01	0	
		EQUI 219	Null	Battery Terminal Post Coater 33	Particulate Matter	0.000148	0.07	0.00065	
					PM < 2.5 micron	0.000148	0.07	0.00065	
					PM < 10 micron	0.000148	0.07	0.00065	
					Volatile Organic Compounds	0.03	0.12	0	
		EQUI 220	Null	Battery Terminal Post Coater 34	Particulate Matter	0.000148	0.07	0.00065	
					PM < 2.5 micron	0.000148	0.07	0.00065	
					PM < 10 micron	0.000148	0.07	0.00065	
					Volatile Organic Compounds	0.03	0.12	0	
		EQUI 233	Null	Battery Terminal Post Co..	Volatile Organic Compounds	9.67e-05	0.000424	0	
		EQUI 240	Null	Prototype Coater	Particulate Matter	0.04	0.17	0.17	
					PM < 2.5 micron	0.04	0.17	0.17	
					PM < 10 micron	0.04	0.17	0.17	
					Volatile Organic Compounds	0.07	0.31	0.31	
Fugitive	Cooling Tower	FUGI 1	Null	Cooling Tower 1 (CT1)	Particulate Matter	2.61e-06	1.14e-05	1.14e-05	
					PM < 2.5 micron	2.61e-06	1.14e-05	1.14e-05	
					PM < 10 micron	2.61e-06	1.14e-05	1.14e-05	
		FUGI 2	Null	Cooling Tower 2 (CT2)	Particulate Matter	2.61e-06	1.14e-05	1.14e-05	
					PM < 2.5 micron	2.61e-06	1.14e-05	1.14e-05	
					PM < 10 micron	2.61e-06	1.14e-05	1.14e-05	
	Paved Road	FUGI 3	Null	Paved Roads	Particulate Matter	0.14	0.61	0.61	
					PM < 2.5 micron	0.01	0.03	0.03	
					PM < 10 micron	0.03	0.12	0.12	
Structure	Stack/Vent	STRU 41	Null	Solvent Vapor Remediation System Stack	1,1-Dichloroethane	1.57e-06	6.86e-06	6.86e-06	
					1,1,1-Trichloroethane	2.12e-06	9.31e-06	9.31e-06	
					1,1,2-Trichloroethane	1.74e-06	7.63e-06	7.63e-06	
					1,1,2,2-Tetrachloroethane	2.02e-06	8.85e-06	8.85e-06	
					1,2-Dichloroethane	1.04e-06	4.58e-06	4.58e-06	
					1,2-Dichloropropane	1.6e-06	7.02e-06	7.02e-06	
					1,2,4-Trichlorobenzene	2.58e-05	0.000113	0.000113	
					1,2,4-Trimethylbenzene	3.1e-06	1.36e-05	1.36e-05	
					1,3-Butadiene	8.71e-07	3.81e-06	3.81e-06	
					Benzene	2.19e-06	9.61e-06	9.61e-06	
					Bromomethane (Methyl bromide)	1.57e-06	6.86e-06	6.86e-06	
					Carbon disulfide	1.74e-05	7.63e-05	7.63e-05	
					Carbon tetrachloride	2.96e-06	1.3e-05	1.3e-05	
					Chlorobenzene (Monochlorobenzene)	1.88e-06	8.24e-06	8.24e-06	
					Chloroethane	1.78e-06	7.78e-06	7.78e-06	
					Chloroform	1.36e-06	5.95e-06	5.95e-06	
					Chloromethane	1.53e-05	6.71e-05	6.71e-05	
					Chloromethylbenzene	8.36e-06	3.66e-05	3.66e-05	

					Dichloromethane (Methylene chloride)	0.000142	0.000621	0.000621	
					Ethylbenzene	2.09e-06	9.15e-06	9.15e-06	
					Hexachlorobutadiene	1.36e-05	5.95e-05	5.95e-05	

PTE by SI

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Structure	Stack/Vent	STRU 41	Null	Solvent Vapor Remediation System Stack	Hexane	9.75e-06	4.27e-05	4.27e-05	
					Methyl ethyl ketone (MEK)	2.54e-06	1.11e-05	1.11e-05	
					Methyl isobutyl ketone (4-Methyl-2-pentanone)	3.48e-06	1.53e-05	1.53e-05	
					Methyl-tert-butylether	4.53e-06	1.98e-05	1.98e-06	
					Naphthalene	1.85e-05	8.09e-05	8.09e-05	
					Styrene	2.37e-06	1.04e-05	1.04e-05	
					Tetrachloroethylene (Perchloroethylene)	2.16e-06	9.46e-06	9.46e-06	
					Toluene	2.4e-06	1.05e-05	1.05e-05	
					Trichloroethylene (TCE)	1.78e-06	7.78e-06	7.78e-06	
					Vinyl acetate (Acetic acid)	1.85e-06	8.09e-06	8.09e-06	
					Vinyl chloride (chloroethene)	5.57e-06	2.44e-05	2.44e-05	
					Xylene (o-)	2.37e-06	1.04e-05	1.04e-05	
					Xylenes, Total	4.88e-06	2.14e-05	2.14e-05	
		STRU 44	Null	Exhaust fan #1	1,1-Dichloroethane	3.91e-06	1.71e-05	1.71e-05	
					1,1,1-Trichloroethane	4.41e-06	1.93e-05	1.93e-05	
					1,1,2-Trichloroethane	3.49e-06	1.53e-05	1.53e-05	
					1,1,2,2-Tetrachloroethane	4.41e-06	1.93e-05	1.93e-05	
					1,2-Dichloroethane	2.13e-06	9.35e-06	9.35e-06	
					1,2-Dichloropropane	3.27e-06	1.43e-05	1.43e-05	
					1,2,4-Trichlorobenzene	5.34e-05	0.000234	0.000234	
					1,2,4-Trimethylbenzene	6.47e-06	2.84e-05	2.84e-05	
					1,3-Butadiene	1.85e-06	8.1e-06	8.1e-06	
					Benzene	9.96e-06	4.36e-05	4.36e-05	
					Bromomethane (Methyl bromide)	3.27e-06	1.43e-05	1.43e-05	
					Carbon disulfide	3.13e-06	1.37e-05	1.37e-05	
					Carbon tetrachloride	6.12e-06	2.68e-05	2.68e-05	
					Chlorobenzene (Monochlorobenzene)	3.91e-06	1.71e-05	1.71e-05	
					Chloroethane	3.7e-06	1.62e-05	1.62e-05	
					Chloroform	2.77e-06	1.22e-05	1.22e-05	
					Chloromethane	2.21e-06	9.66e-06	9.96e-06	
					Chloromethylbenzene	1.71e-05	7.48e-05	7.48e-05	
					Dichloromethane (Methylene chloride)	1.71e-05	7.48e-05	7.48e-05	
					Ethylbenzene	4.34e-06	1.9e-05	1.9e-05	
					Hexachlorobutadiene	0.000285	0.000125	0.000125	
					Hexane	4.48e-06	1.96e-05	1.96e-05	
					Methyl ethyl ketone (MEK)	5.26e-06	2.31e-05	2.31e-05	
					Methyl isobutyl ketone (4-Methyl-2-pentanone)	7.11e-06	3.12e-05	3.12e-05	
					Methyl-tert-butylether	9.25e-06	4.05e-05	4.05e-05	
					Naphthalene	1.85e-05	8.1e-05	8.1e-05	
					Styrene	4.91e-06	2.15e-05	2.15e-05	
					Tetrachloroethylene (Perchloroethylene)	4.48e-06	1.96e-05	1.96e-05	
					Toluene	1.92e-05	8.41e-05	8.41e-05	
					Trichloroethylene (TCE)	3.63e-06	1.59e-05	1.59e-05	
					Vinyl acetate (Acetic acid)	3.84e-06	1.68e-05	1.68e-05	
					Vinyl chloride (chloroethene)	1.78e-06	7.79e-06	7.79e-06	
					Xylene (o-)	4.91e-06	2.15e-05	2.15e-05	
					Xylenes, Total	9.96e-06	4.36e-05	4.36e-05	
		STRU 45	Null	Exhaust fan #2	1,1-Dichloroethane	3.2e-06	1.4e-05	1.4e-05	
					1,1,1-Trichloroethane	4.41e-06	1.93e-05	1.93e-05	
					1,1,2-Trichloroethane	3.49e-06	1.53e-05	1.53e-05	
					1,1,2,2-Tetrachloroethane	4.41e-06	1.93e-05	1.93e-05	
					1,2-Dichloroethane	2.13e-06	9.35e-06	9.35e-06	
					1,2-Dichloropropane	3.27e-06	1.43e-05	1.43e-05	
					1,2,4-Trichlorobenzene	5.34e-05	0.000234	0.000234	
					1,2,4-Trimethylbenzene	6.47e-06	2.84e-05	2.84e-05	
					1,3-Butadiene	1.85e-06	8.1e-06	8.1e-06	
					Benzene	9.96e-06	4.36e-05	4.36e-05	
					Bromomethane (Methyl bromide)	3.27e-06	1.43e-05	1.43e-05	
					Carbon disulfide	3.13e-06	1.37e-05	1.37e-05	
					Carbon tetrachloride	6.12e-06	2.68e-05	2.68e-05	
					Chlorobenzene (Monochlorobenzene)	3.91e-06	1.71e-05	1.71e-05	
					Chloroethane	3.7e-06	1.62e-05	1.62e-05	
					Chloroform	2.77e-06	1.22e-05	1.22e-05	
					Chloromethane	2.21e-06	9.66e-06	9.66e-06	
					Chloromethylbenzene	1.71e-05	7.48e-05	7.48e-05	
					Dichloromethane (Methylene chloride)	1.71e-05	7.48e-05	7.48e-05	
					Ethylbenzene	4.34e-06	1.9e-05	1.9e-05	
					Hexachlorobutadiene	2.85e-05	0.000125	0.000125	
					Hexane	4.48e-06	1.96e-05	1.96e-05	
					Methyl ethyl ketone (MEK)	5.26e-06	2.31e-05	2.31e-05	
					Methyl isobutyl ketone (4-Methyl-2-pentanone)	7.11e-05	3.12e-05	3.12e-05	

					Methyl-tert-butylether	9.25e-06	4.05e-05	4.05e-05	
					Naphthalene	1.85e-05	8.1e-05	8.1e-05	
					Styrene	4.91e-06	2.15e-05	2.15e-05	

PTE by SI

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Structure	Stack/Vent	STRU 45	Null	Exhaust fan #2	Tetrachloroethylene (Perchloroethylene)	4.48e-06	1.96e-05	1.96e-05	
					Toluene	1.92e-05	8.41e-05	8.41e-05	
					Trichloroethylene (TCE)	3.63e-06	1.59e-05	1.59e-05	
					Vinyl acetate (Acetic acid)	3.84e-06	1.68e-05	1.68e-05	
					Vinyl chloride (chloroethene)	1.78e-06	7.79e-06	7.79e-06	
					Xylene (o-)	4.91e-06	2.15e-05	2.15e-05	
					Xylenes, Total	9.96e-06	4.36e-05	4.36e-05	
		STRU 46	Null	Exhaust fan #3	1,1-Dichloroethane	5.79e-05	0.000254	0.000254	
					1,1,1-Trichloroethane	7.97e-05	0.000349	0.000349	
					1,1,2-Trichloroethane	6.3e-05	0.000276	0.000276	
					1,1,2,2-Tetrachloroethane	7.97e-05	0.000349	0.000349	
					1,2-Dichloroethane	3.86e-05	0.000169	0.000169	
					1,2-Dichloropropane	5.92e-05	0.000259	0.000259	
					1,2,4-Trichlorobenzene	0.000117	0.000513	0.000513	
					1,2,4-Trimethylbenzene	0.000965	0.00423	0.00423	
					1,3-Butadiene	3.34e-05	0.000146	0.000146	
					Benzene	0.00018	0.00079	0.00079	
					Bromomethane (Methyl bromide)	5.92e-05	0.000259	0.000259	
					Carbon disulfide	5.66e-05	0.000248	0.000248	
					Carbon tetrachloride	0.000111	0.000484	0.000484	
					Chlorobenzene (Monochlorobenzene)	7.07e-05	0.00031	0.00031	
					Chloroethane	6.69e-05	0.000293	0.000293	
					Chloroform	5.02e-05	0.00022	0.00022	
					Chloromethane	4.04e-05	0.000177	0.000177	
					Chloromethylbenzene	0.000309	0.00135	0.00135	
					Dichloromethane (Methylene chloride)	0.000309	0.00135	0.00135	
					Ethylbenzene	7.93e-05	0.000347	0.000347	
					Hexachlorobutadiene	0.000514	0.00225	0.00225	
					Hexane	8.1e-05	0.000355	0.000355	
					Methyl ethyl ketone (MEK)	9.52e-05	0.000417	0.000417	
					Methyl isobutyl ketone (4-Methyl-2-pentanone)	0.000129	0.000563	0.000563	
					Methyl-tert-butylether	0.000167	0.000732	0.000732	
					Naphthalene	0.000334	0.00146	0.00146	
					Styrene	9.13e-05	0.0004	0.0004	
					Tetrachloroethylene (Perchloroethylene)	8.1e-05	0.000355	0.000355	
					Toluene	0.000348	0.00153	0.00153	
					Trichloroethylene (TCE)	6.56e-05	0.000287	0.000287	
					Vinyl acetate (Acetic acid)	6.95e-05	0.000304	0.000304	
					Vinyl chloride (chloroethene)	3.22e-05	0.000141	0.000141	
					Xylene (o-)	9.04e-05	0.000396	0.000396	
					Xylenes, Total	0.000184	0.000808	0.000808	
		STRU 51	Null	Exhaust fan #9	1,1-Dichloroethane	9.35e-06	4.1e-05	4.1e-05	
					1,1,1-Trichloroethane	1.27e-05	5.54e-05	5.54e-05	
					1,1,2-Trichloroethane	9.9e-06	4.34e-05	4.34e-05	
					1,1,2,2-Tetrachloroethane	1.27e-05	5.54e-05	5.54e-05	
					1,2-Dichloroethane	6.05e-06	2.65e-05	2.65e-05	
					1,2-Dichloropropane	9.35e-06	4.1e-05	4.1e-05	
					1,2,4-Trichlorobenzene	0.000151	0.000663	663	
					1,2,4-Trimethylbenzene	1.84e-05	8.07e-05	8.07e-05	
					1,3-Butadiene	5.23e-06	2.29e-05	2.29e-05	
					Benzene	3.3e-05	0.000145	0.000145	
					Bromomethane (Methyl bromide)	9.35e-06	4.1e-05	4.1e-05	
					Carbon disulfide	9.08e-06	3.98e-05	3.98e-05	
					Carbon tetrachloride	1.76e-05	7.71e-05	7.71e-05	
					Chlorobenzene (Monochlorobenzene)	1.13e-05	4.94e-05	4.94e-05	
					Chloroethane	0.000107	4.7e-05	4.7e-05	
					Chloroform	7.98e-06	3.49e-05	3.49e-05	
					Chloromethane	2.31e-05	0.000101	0.000101	
					Chloromethylbenzene	4.95e-05	0.000217	0.000217	
					Dichloromethane (Methylene chloride)	4.95e-05	0.000217	0.000217	
					Ethylbenzene	4.68e-05	0.000205	0.000205	
					Hexachlorobutadiene	7.98e-05	0.000349	0.000349	
					Hexane	1.27e-05	5.54e-05	5.54e-05	
					Methyl ethyl ketone (MEK)	1.51e-05	6.63e-05	6.63e-05	
					Methyl isobutyl ketone (4-Methyl-2-pentanone)	2.12e-05	9.28e-05	9.28e-05	
					Methyl-tert-butylether	2.72e-05	0.000119	0.000119	
					Naphthalene	5.5e-05	0.000241	0.000241	
					Styrene	1.4e-05	6.15e-05	6.15e-05	
					Tetrachloroethylene (Perchloroethylene)	1.29e-05	5.56e-05	5.56e-05	
					Toluene	6.33e-05	0.000277	0.000277	
					Trichloroethylene (TCE)	4.95e-05	0.000217	0.000217	

					Vinyl acetate (Acetic acid)	1.1e-05	4.82e-05	4.82e-05	
					Vinyl chloride (chloroethene)	5.23e-06	2.29e-05	2.29e-05	
					Xylene (o-)	6.05e-05	0.000265	0.000265	

PTE by SI

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Structure	Stack/Vent	STRU 51	Null	Exhaust fan #9	Xylenes, Total	0.000195	0.000856	0.000856	
		STRU 52	Null	Exhaust fan #10	1,1-Dichloroethane	1.25e-05	5.46e-05	5.46e-05	
					1,1,1-Trichloroethane	1.69e-05	7.39e-05	7.39e-05	
					1,1,2-Trichloroethane	6.6e-05	0.000289	0.000289	
					1,1,2,2-Tetrachloroethane	1.69e-05	7.39e-05	7.39e-05	
					1,2-Dichloroethane	8.07e-06	3.53e-05	3.53e-05	
					1,2-Dichloropropane	1.25e-05	5.46e-05	5.46e-05	
					1,2,4-Trichlorobenzene	0.000202	0.000884	0.000884	
					1,2,4-Trimethylbenzene	2.46e-05	0.000108	0.000108	
					1,3-Butadiene	6.97e-06	3.05e-05	3.05e-05	
					Benzene	4.4e-05	0.000193	0.000193	
					Bromomethane (Methyl bromide)	1.25e-05	5.46e-05	5.46e-05	
					Carbon disulfide	1.21e-05	5.3e-05	5.3e-05	
					Carbon tetrachloride	2.35e-05	0.000103	0.000103	
					Chlorobenzene (Monochlorobenzene)	1.5e-05	6.59e-05	6.59e-05	
					Chloroethane	1.43e-05	6.27e-05	6.27e-05	
					Chloroform	1.06e-05	4.66e-05	4.66e-05	
					Chloromethane	3.08e-05	0.000135	0.000135	
					Chloromethylbenzene	6.6e-05	0.000289	0.000289	
					Dichloromethane (Methylene chloride)	6.6e-05	0.000289	0.000289	
					Ethylbenzene	6.24e-05	0.000273	0.000273	
					Hexachlorobutadiene	0.000106	0.000466	0.000466	
					Hexane	1.69e-05	7.39e-05	7.39e-05	
					Methyl ethyl ketone (MEK)	2.02e-05	8.84e-05	8.84e-05	
					Methyl isobutyl ketone (4-Methyl-2-pentanone)	2.82e-05	0.000124	0.000124	
					Methyl-tert-butylether	3.63e-05	0.000159	0.000159	
					Naphthalene	7.34e-05	0.000321	0.000321	
					Styrene	1.87e-05	8.19e-05	8.19e-05	
					Tetrachloroethylene (Perchloroethylene)	1.72e-05	7.55e-05	7.55e-05	
					Toluene	8.44e-05	0.00037	0.00037	
					Trichloroethylene (TCE)	6.6e-05	0.000289	0.000289	
					Vinyl acetate (Acetic acid)	1.47e-05	6.43e-05	6.43e-05	
					Vinyl chloride (chloroethene)	6.97e-06	3.05e-05	3.05e-05	
					Xylene (o-)	807	0.000353	0.000353	
					Xylenes, Total	0.00026	0.00114	0.00114	
		STRU 56	Null	Exhaust fan #14	1,1-Dichloroethane	4.68e-06	2.05e-05	2.05e-05	
					1,1,1-Trichloroethane	6.33e-06	2.77e-05	2.77e-05	
					1,1,2-Trichloroethane	4.95e-06	2.17e-05	2.17e-05	
					1,1,2,2-Tetrachloroethane	6.33e-06	2.77e-05	2.77e-05	
					1,2-Dichloroethane	3.03e-06	1.33e-05	1.33e-05	
					1,2-Dichloropropane	4.68e-06	2.05e-05	2.05e-05	
					1,2,4-Trichlorobenzene	7.57e-05	0.000331	0.000331	
					1,2,4-Trimethylbenzene	9.22e-06	4.04e-05	4.04e-05	
					1,3-Butadiene	2.61e-06	1.14e-05	1.14e-05	
					Benzene	1.65e-05	7.23e-05	7.23e-05	
					Bromomethane (Methyl bromide)	4.68e-06	2.05e-05	2.05e-05	
					Carbon disulfide	4.54e-06	1.99e-05	1.99e-05	
					Carbon tetrachloride	8.8e-06	3.86e-05	3.86e-05	
					Chlorobenzene (Monochlorobenzene)	5.64e-06	2.47e-05	2.47e-05	
					Chloroethane	5.36e-06	2.35e-05	2.35e-05	
					Chloroform	3.99e-06	1.75e-05	1.75e-05	
					Chloromethane	1.16e-05	5.06e-05	5.06e-05	
					Chloromethylbenzene	2.48e-05	0.000108	0.000108	
					Dichloromethane (Methylene chloride)	2.48e-05	0.000108	0.000108	
					Ethylbenzene	2.34e-05	0.000102	0.000102	
					Hexachlorobutadiene	3.99e-05	0.000175	0.000175	
					Hexane	6.33e-06	2.77e-05	2.77e-05	
					Methyl ethyl ketone (MEK)	7.57e-06	3.31e-05	3.31e-05	
					Methyl isobutyl ketone (4-Methyl-2-pentanone)	1.06e-05	4.64e-05	4.64e-05	
					Methyl-tert-butylether	1.36e-05	5.96e-05	5.96e-05	
					Naphthalene	2.75e-05	0.00012	0.00012	
					Styrene	7.02e-06	307	3.07e-05	
					Tetrachloroethylene (Perchloroethylene)	6.47e-06	2.83e-05	2.83e-05	
					Toluene	3.16e-05	0.000139	0.000139	
					Trichloroethylene (TCE)	2.48e-05	0.000108	0.000108	
					Vinyl acetate (Acetic acid)	5.5e-06	2.41e-05	2.41e-05	
					Vinyl chloride (chloroethene)	2.61e-06	1.14e-05	1.14e-05	
					Xylene (o-)	3.03e-05	0.000133	0.000133	
					Xylenes, Total	9.77e-05	0.000428	0.000428	
		STRU 57	Null	Shipping vent 20	1,1-Dichloroethane	3.18e-07	1.39e-06	1.39e-06	
					1,1,1-Trichloroethane	4.5e-07	1.97e-06	1.97e-06	

					1,1,2-Trichloroethane	3.56e-07	1.56e-06	1.56e-06	
					1,1,2,2-Tetrachloroethane	4.5e-07	1.97e-06	1.97e-06	
					1,2-Dichloroethane	2.25e-07	9.84e-07	9.84e-07	

PTE by SI

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Structure	Stack/Vent	STRU 57	Null	Shipping vent 20	1,2-Dichloropropane	3.37e-07	1.48e-06	1.48e-06	
					1,2,4-Trichlorobenzene	5.39e-06	0.000236	0.000236	
					1,2,4-Trimethylbenzene	6.56e-07	2.87e-06	2.87e-06	
					1,3-Butadiene	1.85e-07	8.12e-07	8.12e-07	
					Benzene	2.25e-07	9.84e-07	9.84e-07	
					Bromomethane (Methyl bromide)	3.37e-07	1.48e-06	1.48e-06	
					Carbon disulfide	3.18e-07	1.39e-06	1.39e-06	
					Carbon tetrachloride	6.18e-07	2.71e-06	2.71e-06	
					Chlorobenzene (Monochlorobenzene)	3.93e-07	1.72e-06	1.72e-06	
					Chloroethane	3.75e-07	1.64e-06	1.64e-06	
					Chloroform	2.81e-07	1.23e-06	1.23e-06	
					Chloromethane	2.25e-07	9.84e-07	9.84e-07	
					Chloromethylbenzene	1.74e-06	7.63e-06	7.63e-06	
					Dichloromethane (Methylene chloride)	1.76e-06	7.71e-06	7.71e-06	
					Ethylbenzene	4.01e-06	1.76e-05	1.76e-06	
					Hexachlorobutadiene	2.87e-06	1.26e-05	1.26e-05	
					Hexane	4.5e-07	1.97e-06	1.97e-06	
					Methyl ethyl ketone (MEK)	5.43e-07	2.38e-06	2.38e-06	
					Methyl isobutyl ketone (4-Methyl-2-pentanone)	7.49e-07	3.28e-06	3.28e-06	
					Methyl-tert-butylether	9.55e-07	4.18e-06	4.18e-06	
					Naphthalene	1.91e-06	8.37e-06	8.37e-06	
					Styrene	5.06e-07	2.22e-06	2.22e-06	
					Tetrachloroethylene (Perchloroethylene)	4.5e-07	1.97e-06	1.97e-06	
					Toluene	5.06e-07	2.22e-06	2.22e-06	
					Trichloroethylene (TCE)	4.2e-06	1.84e-05	1.84e-05	
					Vinyl acetate (Acetic acid)	3.93e-07	1.72e-06	1.72e-06	
					Vinyl chloride (chloroethene)	1.84e-07	8.04e-07	8.04e-07	
					Xylene (o-)	4.87e-06	2.13e-05	2.13e-05	
					Xylenes, Total	1.75e-05	7.68e-05	7.68e-05	
		STRU 59	Null	Exhaust fan #12	1,1-Dichloroethane	5.97e-07	2.61e-06	2.61e-06	
					1,1,1-Trichloroethane	8.18e-07	3.58e-06	3.58e-06	
					1,1,2-Trichloroethane	6.48e-07	2.84e-06	2.84e-06	
					1,1,2,2-Tetrachloroethane	8.18e-07	3.58e-06	3.58e-06	
					1,2-Dichloroethane	3.92e-07	1.72e-06	1.72e-06	
					1,2-Dichloropropane	6.14e-07	2.69e-06	2.69e-06	
					1,2,4-Trichlorobenzene	9.89e-06	4.33e-05	4.33e-05	
					1,2,4-Trimethylbenzene	1.31e-05	5.75e-05	5.75e-05	
					1,3-Butadiene	3.41e-07	1.49e-06	1.49e-06	
					Benzene	1.87e-06	8.21e-06	8.21e-06	
					Bromomethane (Methyl bromide)	5.97e-07	2.61e-06	2.61e-06	
					Carbon disulfide	5.8e-07	2.54e-06	2.54e-07	
					Carbon tetrachloride	1.12e-06	4.93e-06	4.93e-06	
					Chlorobenzene (Monochlorobenzene)	7.33e-07	3.21e-06	3.21e-06	
					Chloroethane	6.82e-07	2.99e-06	2.99e-06	
					Chloroform	5.11e-07	2.24e-06	2.24e-06	
					Chloromethane	1.48e-06	6.49e-06	6.49e-06	
					Chloromethylbenzene	3.24e-06	1.42e-05	1.42e-05	
					Dichloromethane (Methylene chloride)	3.24e-06	1.42e-05	1.42e-05	
					Ethylbenzene	8.35e-06	3.66e-05	3.66e-05	
					Hexachlorobutadiene	5.28e-06	2.31e-05	2.31e-05	
					Hexane	8.18e-07	3.58e-06	3.58e-06	
					Methyl ethyl ketone (MEK)	9.72e-07	4.26e-06	4.26e-06	
					Methyl isobutyl ketone (4-Methyl-2-pentanone)	1.36e-06	5.97e-06	5.97e-06	
					Methyl-tert-butylether	1.7e-06	7.47e-06	7.47e-06	
					Naphthalene	3.41e-06	1.49e-05	1.49e-05	
					Styrene	9.03e-07	3.96e-06	3.96e-06	
					Tetrachloroethylene (Perchloroethylene)	8.35e-07	3.66e-06	3.66e-06	
					Toluene	4.43e-06	1.94e-05	1.94e-05	
					Trichloroethylene (TCE)	6.65e-07	2.91e-06	2.91e-06	
					Vinyl acetate (Acetic acid)	7.16e-07	3.14e-06	3.14e-06	
					Vinyl chloride (chloroethene)	3.41e-07	1.49e-06	1.49e-06	
					Xylene (o-)	1.28e-05	5.6e-05	5.6e-05	
					Xylenes, Total	3.61e-05	0.000158	0.000158	
		STRU 60	Null	Exhaust fan #13	1,1-Dichloroethane	5.97e-07	2.61e-06	2.61e-06	
					1,1,1-Trichloroethane	8.18e-07	3.58e-06	3.58e-06	
					1,1,2-Trichloroethane	6.48e-07	2.84e-06	2.84e-06	
					1,1,2,2-Tetrachloroethane	8.18e-07	3.58e-06	3.58e-06	
					1,2-Dichloroethane	3.92e-07	1.72e-06	1.72e-06	
					1,2-Dichloropropane	6.14e-07	2.69e-06	2.69e-06	
					1,2,4-Trichlorobenzene	9.89e-06	4.33e-05	4.33e-05	
					1,2,4-Trimethylbenzene	1.31e-05	5.75e-05	5.75e-05	

					1,3-Butadiene	3.41e-07	1.49e-06	1.49e-06	
					Benzene	1.87e-06	8.21e-06	8.21e-06	
					Bromomethane (Methyl bromide)	5.97e-07	2.61e-06	2.61e-06	

PTE by SI

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Structure	Stack/Vent	STRU 60	Null	Exhaust fan #13	Carbon disulfide	5.8e-07	2.54e-06	2.54e-06	
					Carbon tetrachloride	1.12e-06	4.93e-06	4.93e-06	
					Chlorobenzene (Monochlorobenzene)	7.33e-07	3.21e-06	3.21e-06	
					Chloroethane	6.82e-07	2.99e-06	2.99e-06	
					Chloroform	5.11e-07	2.24e-06	2.24e-06	
					Chloromethane	1.48e-06	6.49e-06	6.49e-06	
					Chloromethylbenzene	3.24e-06	1.42e-05	1.42e-05	
					Dichloromethane (Methylene chloride)	3.24e-06	1.42e-05	1.42e-05	
					Ethylbenzene	8.35e-06	3.66e-05	3.66e-05	
					Hexachlorobutadiene	5.28e-06	2.31e-05	2.31e-05	
					Hexane	8.18e-07	3.58e-06	3.58e-06	
					Methyl ethyl ketone (MEK)	9.72e-07	4.26e-06	4.26e-06	
					Methyl isobutyl ketone (4-Methyl-2-pentanone)	1.36e-06	5.97e-06	5.97e-06	
					Methyl-tert-butylether	1.7e-06	7.47e-06	7.47e-06	
					Naphthalene	3.41e-06	1.49e-05	1.49e-05	
					Styrene	9.03e-07	3.96e-06	3.96e-06	
					Tetrachloroethylene (Perchloroethylene)	8.35e-07	3.66e-06	3.66e-06	
					Toluene	4.43e-06	1.94e-05	1.94e-05	
					Trichloroethylene (TCE)	6.65e-07	2.91e-06	2.91e-07	
					Vinyl acetate (Acetic acid)	7.16e-07	3.14e-06	3.14e-06	
					Vinyl chloride (chloroethene)	3.41e-07	1.49e-06	1.49e-06	
					Xylene (o-)	1.28e-05	5.6e-05	5.6e-05	
					Xylenes, Total	3.61e-05	0.000158	0.000158	

Relationships

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Relationship	Related SI ID	% Flow	Related SI Type	Related Delta Designation	Relationship Start Date	Relationship End Date	
Equipment	Abrasive Equipment	EQUI 113	Null	Tool room 1 Abrasive Blasting	is controlled by	TREA 52	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	5/12/2021	Null	
					sends to	STRU 57	100	Stack/Vent	Null	5/12/2021	Null	
		EQUI 114	Null	Tool room 2 Abrasive Blasting	is controlled by	TREA 53	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	5/12/2021	Null	
					sends to	STRU 57	100	Stack/Vent	Null	5/12/2021	Null	
		EQUI 115	Null	DC Abrasive Blasting	is controlled by	TREA 54	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	5/12/2021	Null	
					sends to	STRU 43	50	Stack/Vent	Null	5/12/2021	Null	
						STRU 50	50	Stack/Vent	Null	5/12/2021	Null	
	Casting Equipment	EQUI 121	Null	Die Cast (DC09)	is controlled by	TREA 25	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/1998	Null	
						TREA 61	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 15	95	Stack/Vent	Null	1/1/1998	Null	
						STRU 48	5	Stack/Vent	Null	1/1/1998	Null	
		EQUI 122	Null	Die Cast (DC12)	is controlled by	TREA 25	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/1998	Null	
						TREA 61	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 15	95	Stack/Vent	Null	1/1/1998	Null	
						STRU 48	5	Stack/Vent	Null	1/1/1998	Null	
		EQUI 123	Null	Die Cast (DC33)	is controlled by	TREA 25	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/1998	Null	
						TREA 61	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 15	95	Stack/Vent	Null	1/1/1998	Null	
						STRU 49	5	Stack/Vent	Null	1/1/1998	Null	
		EQUI 124	Null	Die Cast (DC14)	is controlled by	TREA 26	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/1998	Null	
						TREA 63	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 16	95	Stack/Vent	Null	1/1/1998	Null	
						STRU 43	5	Stack/Vent	Null	1/1/1998	Null	
		EQUI 125	Null	Die Cast (DC15)	is controlled by	TREA 26	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/1998	Null	
						TREA 63	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 16	95	Stack/Vent	Null	1/1/1998	Null	
						STRU 50	5	Stack/Vent	Null	1/1/1998	Null	
		EQUI 126	Null	Die Cast (DC21)	is controlled by	TREA 26	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/1998	Null	
						TREA 62	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 16	95	Stack/Vent	Null	1/1/1998	Null	
						STRU 50	5	Stack/Vent	Null	1/1/1998	Null	
		EQUI 127	Null	Die Cast (DC08)	is controlled by	TREA 27	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/1995	Null	
						TREA 64	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 17	95	Stack/Vent	Null	1/1/1995	Null	
						STRU 47	5	Stack/Vent	Null	1/1/1995	Null	
		EQUI 128	Null	Die Cast (DC10)	is controlled by	TREA 27	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/1995	Null	
						TREA 64	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	

					sends to	STRU 17	95	Stack/Vent	Null	1/1/1995	Null	

Relationships

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Relationship	RelatedSI ID	% Flow	Related SI Type	Related Delta Designation	Relationship Start Date	Relationship End Date	
Equipment	Casting Equipment	EQUI 128	Null	Die Cast (DC10)	sends to	STRU 47	5	Stack/Vent	Null	1/1/1995	Null	
		EQUI 129	Null	Die Cast (DC17)	is controlled by	TREA 27	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/1995	Null	
						TREA 64	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 17	95	Stack/Vent	Null	1/1/1995	Null	
						STRU 47	5	Stack/Vent	Null	1/1/1995	Null	
		EQUI 130	Null	Die Cast (DC18)	is controlled by	TREA 65	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
						TREA 78	0	012-Electrostatic Precipitator - Low Efficiency	Null	7/1/2022	Null	
					sends to	STRU 44	5	Stack/Vent	Null	1/1/1995	Null	
						STRU 74	95	Stack/Vent	Null	7/1/2022	Null	
		EQUI 131	Null	Die Cast (DC36)	is controlled by	TREA 65	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
						TREA 78	0	012-Electrostatic Precipitator - Low Efficiency	Null	7/1/2022	Null	
					sends to	STRU 44	5	Stack/Vent	Null	1/1/2000	Null	
						STRU 74	95	Stack/Vent	Null	7/1/2022	Null	
		EQUI 132	Null	Die Cast (DC37)	is controlled by	TREA 30	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/2000	Null	
						TREA 66	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 20	95	Stack/Vent	Null	1/1/2000	Null	
						STRU 44	5	Stack/Vent	Null	1/1/2000	Null	
		EQUI 133	Null	Die Cast (DC25)	is controlled by	TREA 30	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/1999	Null	
						TREA 66	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 20	95	Stack/Vent	Null	1/1/1999	Null	
						STRU 44	5	Stack/Vent	Null	1/1/1999	Null	
		EQUI 134	Null	Die Cast (DC22)	is controlled by	TREA 67	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
						TREA 79	0	012-Electrostatic Precipitator - Low Efficiency	Null	7/1/2022	Null	
					sends to	STRU 44	5	Stack/Vent	Null	1/1/1999	Null	
						STRU 75	95	Stack/Vent	Null	7/1/2022	Null	
		EQUI 135	Null	Die Cast (DC35)	is controlled by	TREA 67	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
						TREA 79	0	012-Electrostatic Precipitator - Low Efficiency	Null	7/1/2022	Null	
					sends to	STRU 44	5	Stack/Vent	Null	1/1/1994	Null	
						STRU 75	95	Stack/Vent	Null	7/1/2022	Null	
		EQUI 136	Null	Die Cast (DC32)	is controlled by	TREA 33	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/1994	Null	
						TREA 68	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 23	95	Stack/Vent	Null	1/1/1994	Null	
						STRU 44	5	Stack/Vent	Null	1/1/1994	Null	
		EQUI 137	Null	Die Cast (DC26)	is controlled by	TREA 34	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/1994	Null	
						TREA 69	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 24	95	Stack/Vent	Null	1/1/1994	Null	
						STRU 45	5	Stack/Vent	Null	1/1/1994	Null	

		EQUI 138	Null	Die Cast (DC27)	iscontrolled by	TREA 34	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/1994	Null	

Relationships

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Relationship	RelatedSI ID	% Flow	Related SI Type	Related Delta Designation	Relationship Start Date	Relationship End Date	
Equipment	Casting Equipment	EQUI 138	Null	Die Cast (DC27)	is controlled by	TREA 69	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 24	95	Stack/Vent	Null	1/1/1994	Null	
						STRU 45	5	Stack/Vent	Null	1/1/1994	Null	
		EQUI 139	Null	Die Cast (DC16)	is controlled by	TREA 35	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/1994	Null	
						TREA 70	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 25	95	Stack/Vent	Null	1/1/1994	Null	
						STRU 45	5	Stack/Vent	Null	1/1/1994	Null	
		EQUI 140	Null	Die Cast (DC28)	is controlled by	TREA 35	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/1994	Null	
						TREA 70	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 25	95	Stack/Vent	Null	1/1/1994	Null	
						STRU 45	5	Stack/Vent	Null	1/1/1994	Null	
		EQUI 141	Null	Die Cast (DC29)	is controlled by	TREA 36	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/1994	Null	
						TREA 71	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 26	95	Stack/Vent	Null	1/1/1994	Null	
						STRU 45	5	Stack/Vent	Null	1/1/1994	Null	
		EQUI 142	Null	Die Cast (DC19)	is controlled by	TREA 36	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/5/2019	Null	
						TREA 72	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 26	95	Stack/Vent	Null	1/5/2019	Null	
						STRU 46	5	Stack/Vent	Null	1/5/2019	Null	
		EQUI 143	Null	Die Cast (DC34)	is controlled by	TREA 36	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/5/2019	Null	
						TREA 71	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 26	95	Stack/Vent	Null	1/5/2019	Null	
						STRU 46	5	Stack/Vent	Null	1/5/2019	Null	
		EQUI 146	Null	Die Cast (DC42)	is controlled by	TREA 39	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/1998	Null	
						TREA 73	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 30	95	Stack/Vent	Null	1/1/1998	Null	
						STRU 53	5	Stack/Vent	Null	1/1/1998	Null	
		EQUI 147	Null	Die Cast (DC38)	is controlled by	TREA 40	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/1998	Null	
						TREA 74	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 31	95	Stack/Vent	Null	1/1/1998	Null	
						STRU 52	5	Stack/Vent	Null	1/1/1998	Null	
		EQUI 149	Null	Die Cast (DC40)	is controlled by	TREA 41	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/1998	Null	
						TREA 75	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 32	95	Stack/Vent	Null	1/1/1998	Null	
						STRU 51	5	Stack/Vent	Null	1/1/1998	Null	
		EQUI 150	Null	Die Cast (DC48)	is controlled by	TREA 41	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/1998	Null	
						TREA 75	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	

					sends to	STRU 32	95	Stack/Vent	Null	1/1/1998	Null	

Relationships

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Relationship	RelatedSI ID	% Flow	Related SI Type	Related Delta Designation	Relationship Start Date	Relationship End Date	
Equipment	Casting Equipment	EQUI 150	Null	Die Cast (DC48)	sends to	STRU 53	5	Stack/Vent	Null	1/1/1998	Null	
		EQUI 152	Null	Die Cast (DC41)	is controlled by	TREA 42	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/1998	Null	
						TREA 76	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 33	95	Stack/Vent	Null	1/1/1998	Null	
						STRU 51	5	Stack/Vent	Null	1/1/1998	Null	
		EQUI 153	Null	Die Cast (DC44)	is controlled by	TREA 43	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/1998	Null	
						TREA 77	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 34	95	Stack/Vent	Null	1/1/1998	Null	
						STRU 56	5	Stack/Vent	Null	1/1/1998	Null	
		EQUI 154	Null	Die Cast (DC45)	is controlled by	TREA 43	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/1998	Null	
						TREA 77	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 34	95	Stack/Vent	Null	1/1/1998	Null	
						STRU 51	5	Stack/Vent	Null	1/1/1998	Null	
		EQUI 155	Null	Die Cast (DC52)	is controlled by	TREA 36	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/2014	Null	
						TREA 72	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 26	95	Stack/Vent	Null	1/1/2014	Null	
						STRU 46	5	Stack/Vent	Null	1/1/2014	Null	
		EQUI 156	Null	Die Cast (DC50)	is controlled by	TREA 42	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/1998	Null	
						TREA 76	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 33	95	Stack/Vent	Null	1/1/1998	Null	
						STRU 51	5	Stack/Vent	Null	1/1/1998	Null	
		EQUI 157	Null	Die Cast (DC51)	is controlled by	TREA 26	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/2014	Null	
						TREA 62	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 16	95	Stack/Vent	Null	1/1/2014	Null	
						STRU 56	5	Stack/Vent	Null	1/1/2014	Null	
		EQUI 158	Null	Die Cast (DC53)	is controlled by	TREA 39	0	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/1998	Null	
						TREA 73	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 30	95	Stack/Vent	Null	1/1/1998	Null	
						STRU 52	5	Stack/Vent	Null	1/1/1998	Null	
		EQUI 160	Null	Billet Saw	sends to	STRU 35	100	Stack/Vent	Null	1/1/2014	Null	
	Distillation Equipment	EQUI 174	Null	Solvent Distillation Unit	sends to	STRU 59	100	Stack/Vent	Null	5/12/2021	Null	
	Melting Equipment	EQUI 101	Null	CF Scrap Re-Melt Pot	is controlled by	TREA 1	0	012-Electrostatic Precipitator - Low Efficiency	CE002	1/1/1999	Null	
						TREA 60	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 1	100	Stack/Vent	SV003	1/1/1999	Null	
		EQUI 102	Null	Small Re-Melt Pot	is controlled by	TREA 1	0	012-Electrostatic Precipitator - Low Efficiency	CE002	1/1/1999	Null	
						TREA 60	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 1	100	Stack/Vent	SV003	1/1/1999	Null	

		EQUI 103	Null	Doe Run Melt Pot	iscontrolled by	TREA 1	0	012-Electrostatic Precipitator - Low Efficiency	CE002	1/1/1999	Null	

Relationships

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Relationship	RelatedSI ID	% Flow	Related SI Type	Related Delta Designation	Relationship Start Date	Relationship End Date	
Equipment	Melting Equipment	EQUI 103	Null	Doe Run Melt Pot	is controlled by	TREA 60	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 1	100	Stack/Vent	SV003	1/1/1999	Null	
		EQUI 104	Null	CF Re-Melt Pot	is controlled by	TREA 1	0	012-Electrostatic Precipitator - Low Efficiency	CE002	1/1/1999	Null	
						TREA 60	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 1	100	Stack/Vent	SV003	1/1/1999	Null	
		EQUI 221	Null	Tin Melt Pot	is controlled by	TREA 1	0	012-Electrostatic Precipitator - Low Efficiency	CE002	1/1/2022	Null	
						TREA 60	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 1	100	Stack/Vent	SV003	1/1/2022	Null	
	Other Combustion	EQUI 106	Null	Make-up Air Unit 1N	sends to	STRU 43	25	Stack/Vent	Null	1/1/1993	Null	
						STRU 47	25	Stack/Vent	Null	1/1/1993	Null	
						STRU 48	25	Stack/Vent	Null	1/1/1993	Null	
						STRU 49	25	Stack/Vent	Null	1/1/1993	Null	
		EQUI 107	Null	Make-up Air Unit 2N	sends to	STRU 44	33	Stack/Vent	Null	1/1/2016	Null	
						STRU 45	33	Stack/Vent	Null	1/1/2016	Null	
						STRU 46	33	Stack/Vent	Null	1/1/2016	Null	
		EQUI 108	Null	Make-up Air Unit 3N	sends to	STRU 44	25	Stack/Vent	Null	1/1/2015	Null	
						STRU 45	25	Stack/Vent	Null	1/1/2015	Null	
						STRU 46	25	Stack/Vent	Null	1/1/2015	Null	
						STRU 47	25	Stack/Vent	Null	1/1/2015	Null	
		EQUI 109	Null	Make-up Air Unit 5N	sends to	STRU 43	25	Stack/Vent	Null	1/1/2016	Null	
						STRU 48	25	Stack/Vent	Null	1/1/2016	Null	
						STRU 49	25	Stack/Vent	Null	1/1/2016	Null	
						STRU 50	25	Stack/Vent	Null	1/1/2016	Null	
		EQUI 110	Null	Make-up Air Unit 6N	sends to	STRU 51	25	Stack/Vent	Null	1/1/1997	Null	
						STRU 52	25	Stack/Vent	Null	1/1/1997	Null	
						STRU 53	25	Stack/Vent	Null	1/1/1997	Null	
						STRU 56	25	Stack/Vent	Null	1/1/1997	Null	
		EQUI 111	Null	Make-up Air Unit 9N	sends to	STRU 44	33	Stack/Vent	Null	1/1/1995	Null	
						STRU 45	33	Stack/Vent	Null	1/1/1995	Null	
						STRU 46	33	Stack/Vent	Null	1/1/1995	Null	
		EQUI 112	Null	Make-up Air Unit 11N	sends to	STRU 51	25	Stack/Vent	Null	1/1/1996	Null	
						STRU 52	25	Stack/Vent	Null	1/1/1996	Null	
						STRU 53	25	Stack/Vent	Null	1/1/1996	Null	
						STRU 56	25	Stack/Vent	Null	1/1/1996	Null	
		EQUI 222	Null	Natural Gas Bake Oven	sends to	STRU 70	100	Stack/Vent	Null	1/1/2022	Null	
	Other Emission Unit	EQUI 223	Null	Coining Booth 1	sends to	STRU 71	100	Stack/Vent	Null	1/1/2022	Null	
		EQUI 224	Null	Coining Booth 2	sends to	STRU 71	100	Stack/Vent	Null	1/1/2022	Null	

		EQUI 225	Null	Coining Booth 3	sends to	STRU 71	100	Stack/Vent	Null	1/1/2022	Null	

Relationships

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Relationship	Related SI ID	% Flow	Related SI Type	Related Delta Designation	Relationship Start Date	Relationship End Date	
Equipment	Other Emission Unit	EQUI 226	Null	Coining Booth 4	sends to	STRU 71	100	Stack/Vent	Null	1/1/2022	Null	
		EQUI 227	Null	Coining Booth 5	sends to	STRU 71	100	Stack/Vent	Null	1/1/2022	Null	
		EQUI 228	Null	Coining Booth 6	sends to	STRU 71	100	Stack/Vent	Null	1/1/2022	Null	
		EQUI 229	Null	Coining Booth 7	sends to	STRU 71	100	Stack/Vent	Null	1/1/2022	Null	
		EQUI 230	Null	Coining Booth 8	sends to	STRU 71	100	Stack/Vent	Null	1/1/2022	Null	
		EQUI 231	Null	Coining Booth 9	sends to	STRU 71	100	Stack/Vent	Null	1/1/2022	Null	
		EQUI 232	Null	Coining Booth 10	sends to	STRU 71	100	Stack/Vent	Null	1/1/2022	Null	
	Parametric Monitor	EQUI 169	Null	Coating Room 1 Pressure Drop Gauge	is monitored by	EQUI 168	Null	Data Acquisition System	Null	2/20/2020	Null	
		EQUI 170	Null	Coating Room 2 Pressure Drop Gauge	is monitored by	EQUI 168	Null	Data Acquisition System	Null	2/20/2020	Null	
		EQUI 171	Null	Coating Room 3 Pressure Drop Gauge	is monitored by	EQUI 168	Null	Data Acquisition System	Null	2/20/2020	Null	
	Reciprocating IC Engine	EQUI 120	Null	Emergency Generator Engine	sends to	STRU 4	100	Stack/Vent	SV002	5/1/2012	Null	
	Solvent Equipment	EQUI 166	Null	Coating Room Bulk Solvent Tank	sends to	STRU 73	100	Stack/Vent	Null	3/1/2022	Null	
		EQUI 173	Null	Coating Room Soaker Tank	sends to	STRU 73	100	Stack/Vent	Null	3/1/2022	Null	
	Spray Booth/Coating Line	EQUI 82	Null	Battery Terminal Post Coater 6	sends to	STRU 73	100	Stack/Vent	Null	3/1/2022	Null	
		EQUI 84	Null	Battery Terminal Post Coater 9	is controlled by	TREA 55	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 73	100	Stack/Vent	Null	3/1/2022	Null	
		EQUI 85	Null	Battery Terminal Post Coater 10	sends to	STRU 73	100	Stack/Vent	Null	3/1/2022	Null	
		EQUI 87	Null	Battery Terminal Post Coater 12	sends to	STRU 73	100	Stack/Vent	Null	3/1/2022	Null	
		EQUI 88	Null	Battery Terminal Post Coater 15	is controlled by	TREA 56	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 73	100	Stack/Vent	Null	3/1/2022	Null	
		EQUI 89	Null	Battery Terminal Post Coater 17	sends to	STRU 73	100	Stack/Vent	Null	3/1/2022	Null	
		EQUI 92	Null	Battery Terminal Post Coater 20	sends to	STRU 73	100	Stack/Vent	Null	3/1/2022	Null	
		EQUI 93	Null	Battery Terminal Post Coater 21	sends to	STRU 73	100	Stack/Vent	Null	3/1/2022	Null	
		EQUI 94	Null	Battery Terminal Post Coater 22	sends to	STRU 73	100	Stack/Vent	Null	3/1/2022	Null	
		EQUI 95	Null	Battery Terminal Post Coater 23	is controlled by	TREA 57	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 73	100	Stack/Vent	Null	3/1/2022	Null	
		EQUI 97	Null	Battery Terminal Post Coater 25	sends to	STRU 73	100	Stack/Vent	Null	3/1/2022	Null	
		EQUI 98	Null	Battery Terminal Post Coater 26	sends to	STRU 73	100	Stack/Vent	Null	3/1/2022	Null	
		EQUI 99	Null	Battery Terminal Post Coater 27	sends to	STRU 73	100	Stack/Vent	Null	3/1/2022	Null	
		EQUI 100	Null	Battery Terminal Post Coater 28	sends to	STRU 73	100	Stack/Vent	Null	3/1/2022	Null	
		EQUI 116	Null	Battery Terminal Post Coater 30	sends to	STRU 50	100	Stack/Vent	Null	1/1/2020	Null	
		EQUI 117	Null	South Building R&D Coater	sends to	STRU 35	100	Stack/Vent	Null	2/15/2022	Null	
		EQUI 172	Null	Battery Terminal Post Coater 29	sends to	STRU 53	100	Stack/Vent	Null	12/1/2021	Null	
		EQUI 219	Null	Battery Terminal Post Coater 33	is controlled by	TREA 58	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 73	100	Stack/Vent	Null	3/1/2022	Null	
		EQUI 220	Null	Battery Terminal Post Coater 34	is controlled by	TREA 59	100	101-High Efficiency Particulate Air Filter (HEPA)	Null	1/1/2022	Null	
					sends to	STRU 73	100	Stack/Vent	Null	3/1/2022	Null	

		EQUI 233	Null	Battery Terminal Post Coater 19	sends to	STRU 50	100	Stack/Vent	Null	1/12/2022	Null	

Relationships

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

SI Category	SI Type	Subject Item ID	Delta Designation	Description	Relationship	RelatedSI ID	% Flow	Related SI Type	Related Delta Designation	Relationship Start Date	Relationship End Date	
Equipment	Spray Booth/Coating Line	EQUI 240	Null	Prototype Coater	sends to	STRU 72	100	Stack/Vent	Null	2/15/2022	Null	
	Sub-slab Depressurization System	EQUI 167	Null	Solvent Vapor Remediation System	is controlled by	TREA 50	100	048-Activated Carbon Adsorption	Null	8/23/2019	Null	
						TREA 51	0	048-Activated Carbon Adsorption	Null	8/23/2019	Null	
					sends to	STRU 41	100	Stack/Vent	Null	8/23/2019	Null	
Structure	Stack/Vent	STRU 73	Null	Battery Terminal Post Coater Stack	is monitored by	EQUI 176	Null	Continuous Emission Monitor	Null	5/21/2021	Null	
Treatment	048-Activated Carbon Adsorption	TREA 50	Null	Carbon Canister 1	is controlled in series by	TREA 51	100	048-Activated Carbon Adsorption	Null	8/23/2019	Null	
	101-High Efficiency Particulate Air Filter (HEPA)	TREA 60	Null	Nederman Filter 15N - STRU 1	is controlled in series by	TREA 1	100	012-Electrostatic Precipitator - Low Efficiency	CE002	1/1/2022	Null	
		TREA 61	Null	Nederman Filter 1N - STRU 15	is controlled in series by	TREA 25	100	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/2022	Null	
		TREA 62	Null	Nederman Filter 2N1 - STRU 16	is controlled in series by	TREA 26	100	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/2022	Null	
		TREA 63	Null	Nederman Filter 2N2 - STRU 16	is controlled in series by	TREA 26	100	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/2022	Null	
		TREA 64	Null	Nederman Filter 3N - STRU 17	is controlled in series by	TREA 27	100	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/2022	Null	
		TREA 65	Null	Nederman Device 5N - STRU 74	is controlled in series by	TREA 78	100	010-Electrostatic Precipitator - High Efficiency	Null	7/1/2022	Null	
		TREA 66	Null	Nederman Filter 6N - STRU 20	is controlled in series by	TREA 30	100	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/2022	Null	
		TREA 67	Null	Nederman Device 8N - STRU 75	is controlled in series by	TREA 79	100	010-Electrostatic Precipitator - High Efficiency	Null	7/1/2022	Null	
		TREA 68	Null	Nederman Filter 9N - STRU 23	is controlled in series by	TREA 33	100	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/2022	Null	
		TREA 69	Null	Nederman Filter 10N - STRU 24	is controlled in series by	TREA 34	100	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/2022	Null	
		TREA 70	Null	Nederman Filter 11N - STRU 25	is controlled in series by	TREA 35	100	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/2022	Null	
		TREA 71	Null	Nederman Filter 12N1 - STRU 26	is controlled in series by	TREA 36	100	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/2022	Null	
		TREA 72	Null	Nederman Filter 12N2 - STRU 26	is controlled in series by	TREA 36	100	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/2022	Null	
		TREA 73	Null	Nederman Filter 16N - STRU 30	is controlled in series by	TREA 39	100	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/2022	Null	
		TREA 74	Null	Nederman Filter 17N - STRU 31	is controlled in series by	TREA 40	100	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/2022	Null	
		TREA 75	Null	Nederman Filter 18N - STRU 32	is controlled in series by	TREA 41	100	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/2022	Null	
		TREA 76	Null	Nederman Filter 19N - STRU 33	is controlled in series by	TREA 42	100	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/2022	Null	
		TREA 77	Null	Nederman Filter 20N - STRU 34	is controlled in series by	TREA 43	100	012-Electrostatic Precipitator - Low Efficiency	Null	1/1/2022	Null	

CEMs

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

Subject ItemID	Delta Designation	Description	Manufacturer	Model	SerialNumber	Parameter	Primary or Backup?	Bypass Capability?	Install Date (CEMs/COMs)	Certification Date	Certification Basis	Span (ppm)	System Full Scale Value (ppm)	
EQUI 176	Null	VOC CEMS (STRU 73)	TBD	TBD	Null	Null	Null	Null	Null	Null	Null	Null	Null	

PMs

AIID(Name):2005(WaterGremlinCo)
Activity: IND20180001

Subject Item ID	Delta Designation	Description	Manufacturer	Model	Serial Number	Parameter Monitored	Bypass Capability? (parametric)	Install Date (parametric)	
EQUI 169	Null	Coating Room 1 Pressure Drop Gauge	Dwyer	616KD-LR	NA	Pressure Drop	No	2/20/2020	
EQUI 170	Null	Coating Room 2 Pressure Drop Gauge	Dwyer	616KD-LR	NA	Pressure Drop	No	2/20/2020	
EQUI 171	Null	Coating Room 3 Pressure Drop Gauge	Dwyer	616KD-LR	NA	Pressure Drop	No	2/20/2020	

DAS

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

Subject Item ID	Delta Designation	Description	Manufacturer	Model	Serial Number	Primary or Backup? (DASs)	Install Date (DASs)	
EQUI 168	Null	Building Management System	Alerton	Envision for BacTalk	NA	Primary	3/1/2008	

FUGI

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

Subject Item Type	Subject Item ID	Delta Designation	Description	Install Year	Pollutants Emitted	
Cooling Tower	FUGI 1	Null	Cooling Tower 1 (CT1)	1995	PM < 2.5 micron	
					PM < 10 micron	
	FUGI 2	Null	Cooling Tower 2 (CT2)	2015	PM < 2.5 micron	
					PM < 10 micron	
	FUGI 4	Null	Cooling Tower #3 (CT3)	2022	Particulate Matter	
					PM < 2.5 micron	
					PM < 10 micron	
Paved Road	FUGI 3	Null	Paved Roads	1990	PM < 2.5 micron	
					PM < 10 micron	

Commented [A73]: FUGI 5, an existing South Campus cooling tower (CT #4) will be submitted under separate cover to MPCA on 8/19/2022. It should be added to this page.

Building

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

Subject Item ID	Delta Designation	Description	Height	Units (height)	Length	Units (length)	Width	Units (width)	
STRU 38	Null	North Building	30	feet	407	feet	371	feet	
STRU 42	Null	South Building	20	feet	240	feet	300	feet	

Stack/Vents

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

Subject Item ID	Delta Designation	Description	Stack Height (feet)	Stack Diameter (feet)	Stack Length (feet)	Stack Width (feet)	Stack Flow Rate (cubic ft/min)	Discharge Temperature (°F)	Flow Rate/Temp Information Source	Discharge Direction	
STRU 1	SV003	Smog Hog #15 Stack	14	1.8	Null	Null	4,505	129	Estimate	Upwards with no cap on stack/vent	
STRU 4	SV002	Emergency Generator Engine Stack	7	0.33	Null	Null	419	1,062	Manufacturer	Upwards with no cap on stack/vent	
STRU 15	Null	Smog Hog #1 Stack	12.08	Null	1.5	1.67	4,505	102	Estimate	Upwards with no cap on stack/vent	
STRU 16	Null	Smog Hog #2 Stack	12.25	Null	1.5	1.67	4,505	102	Estimate	Upwards with no cap on stack/vent	
STRU 17	Null	Smog Hog #3 Stack	12.17	Null	1.5	1.67	3,756	102	Estimate	Upwards with no cap on stack/vent	
STRU 20	Null	Smog Hog #6 Stack	11.92	Null	1.5	1.67	3,756	102	Estimate	Upwards with no cap on stack/vent	
STRU 23	Null	Smog Hog #9 Stack	12.08	Null	1.5	1.67	3,756	102	Estimate	Upwards with no cap on stack/vent	
STRU 24	Null	Smog Hog #10 Stack	12.67	Null	1.5	1.67	3,756	102	Estimate	Upwards with no cap on stack/vent	
STRU 25	Null	Smog Hog #11 Stack	12.33	Null	1.5	1.67	3,756	102	Estimate	Upwards with no cap on stack/vent	
STRU 26	Null	Smog Hog #12 Stack	12.5	Null	1.5	1.67	3,756	102	Estimate	Upwards with no cap on stack/vent	
STRU 30	Null	Smog Hog #16 Stack	17.17	Null	1.5	1.67	3,756	102	Estimate	Upwards with no cap on stack/vent	
STRU 31	Null	Smog Hog #17 Stack	17	Null	1.5	1.67	3,756	102	Estimate	Upwards with no cap on stack/vent	
STRU 32	Null	Smog Hog #18 Stack	18.08	Null	1.5	1.67	3,756	102	Estimate	Upwards with no cap on stack/vent	
STRU 33	Null	Smog Hog #19 Stack	17.5	Null	1.5	1.67	3,756	102	Estimate	Upwards with no cap on stack/vent	
STRU 34	Null	Smog Hog #20 Stack	17.17	Null	1.5	1.67	3,756	102	Estimate	Upwards with no cap on stack/vent	
STRU 35	Null	Smog Hog #21 Stack	24	1.8	Null	Null	2,004	70	Estimate	Upwards with no cap on stack/vent	
STRU 41	Null	Solvent Vapor Remediation System Stack	30	0.67	Null	Null	695	70	Estimate	Upwards with no cap on stack/vent	
STRU 43	Null	Exhaust fan #7	23	3.17	Null	Null	15,000	70	Manufacturer	Upwards with no cap on stack/vent	
STRU 44	Null	Exhaust fan #1	26	3.61	Null	Null	25,000	70	Estimate	Upwards with no cap on stack/vent	
STRU 45	Null	Exhaust fan #2	26	3.61	Null	Null	25,000	70	Estimate	Upwards with no cap on stack/vent	
STRU 46	Null	Exhaust fan #3	26	3.61	Null	Null	25,000	70	Estimate	Upwards with no cap on stack/vent	
STRU 47	Null	Exhaust fan #4	23	3.17	Null	Null	15,000	70	Estimate	Upwards with no cap on stack/vent	
STRU 48	Null	Exhaust fan #5	23	3.17	Null	Null	15,000	70	Estimate	Upwards with no cap on stack/vent	
STRU 49	Null	Exhaust fan #6	23	3.17	Null	Null	15,000	70	Estimate	Upwards with no cap on stack/vent	
STRU 50	Null	Exhaust fan #8	23	3.17	Null	Null	15,000	70	Estimate	Upwards with no cap on stack/vent	
STRU 51	Null	Exhaust fan #9	33	3.17	Null	Null	15,000	70	Estimate	Upwards with no cap on stack/vent	
STRU 52	Null	Exhaust fan #10	33	3.17	Null	Null	15,000	70	Estimate	Upwards with no cap on stack/vent	
STRU 53	Null	Exhaust fan #11	33	3.17	Null	Null	15,000	70	Estimate	Upwards with no cap on stack/vent	
STRU 56	Null	Exhaust fan #14	33	3.17	Null	Null	15,000	70	Estimate	Upwards with no cap on stack/vent	
STRU 57	Null	Shipping vent 20	30	1.38	Null	Null	50	70	Estimate	Horizontally	
STRU 59	Null	Exhaust fan #12	33	3.17	Null	Null	15,000	70	Estimate	Upwards with no cap on stack/vent	
STRU 60	Null	Exhaust fan #13	33	3.17	Null	Null	15,000	70	Estimate	Upwards with no cap on stack/vent	
STRU 68	Null	Melt Pot Room Vent	35.5	2.92	Null	Null	3,619	94.1	Manufacturer	Upwards with no cap on stack/vent	
STRU 69	Null	Doe Run Melt Pot Natural Gas Vent	35.8	0.67	Null	Null	418	258.3	Manufacturer	Upwards with no cap on stack/vent	

STRU 70	Null	Natural Gas Bake Oven Stack	36	0.75	Null	Null	695	175	Estimate	Upwards with a cap on stack/vent	
STRU 71	Null	Coining Booth Stacks	21	2.35	Null	Null	2,400	83	Estimate	Upwards with no cap on stack/vent	

Stack/Vents

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

Subject Item ID	Delta Designation	Description	Stack Height (feet)	Stack Diameter (feet)	Stack Length (feet)	Stack Width (feet)	Stack Flow Rate (cubic ft/min)	Discharge Temperature (°F)	Flow Rate/Temp Information Source	Discharge Direction	
STRU 72	Null	Fume Hood Vent	21	0.9	Null	Null	2,000	70	Estimate	Upwards with no cap on stack/vent	
STRU 73	Null	Battery Terminal Post Coater Stack	40	2.17	Null	Null	15,000	70	Manufacturer	Upwards with no cap on stack/vent	
STRU 74	Null	Smog Hog #5 Stack	11.92	Null	1.5	1.67	3,756	102	Estimate	Upwards with no cap on stack/vent	
STRU 75	Null	Smog Hog #8 Stack	12.08	Null	1.5	1.67	3,756	102	Estimate	Upwards with no cap on stack/vent	

Other Controls

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

Subject Item Type	Subject Item ID	Delta Designation	Description	Manufacturer (Model #)	Installation Start Date	Pollutants Controlled	Capture Efficiency (%)	Destruction/ Collect Efficiency (%)	Subject to CAM?	Large or Other PSEU?	Efficiency Basis	Other Basis Explanation	Other operating parameters?	Other operating parameters description
048-Activated Carbon Adsorption	TREA 50	Null	Carbon Canister 1	H2K Technologies (VLC-024)	4/1/2020	HAPs - Total	100	95	No	Null	Mfr/ Vendor data	Null	No	Null
						Volatile Organic Compounds	100	95	No	Null	Mfr/ Vendor data	Null	No	Null
	TREA 51	Null	Carbon Canister 2	H2K Technologies (VLC-024)	4/1/2020	HAPs - Total	100	95	No	Null	Mfr/ Vendor data	Null	No	Null
						Volatile Organic Compounds	100	95	No	Null	Mfr/ Vendor data	Null	No	Null
101-High Efficiency Particulate Air Filter (HEPA)	TREA 52	Null	HEPA Filter - Tool Room 1 Abrasive Blasting	Ridgid (Sears Craftsman Part# 9-17912)	2/1/2021	Lead	100	99.9	No	Null	Mfr/ Vendor data	Null	No	Null
						Particulate Matter	100	99.98	No	Null	Mfr/ Vendor data	Null	No	Null
						PM < 2.5 micron	100	99.98	No	Null	Mfr/ Vendor data	Null	No	Null
						PM < 10 micron	100	99.98	No	Null	Mfr/ Vendor data	Null	No	Null
	TREA 53	Null	HEPA Filter - Tool Room 2 Abrasive Blasting	Ridgid (Sears Craftsman Part# 9-17912)	2/1/2021	Lead	100	99.9	No	Null	Mfr/ Vendor data	Null	No	Null
						Particulate Matter	100	99.98	No	Null	Mfr/ Vendor data	Null	No	Null
						PM < 2.5 micron	100	99.98	No	Null	Mfr/ Vendor data	Null	No	Null
						PM < 10 micron	100	99.98	No	Null	Mfr/ Vendor data	Null	No	Null
	TREA 54	Null	HEPA Filter - DC Abrasive Blasting	Puracell II (Part# PUPB2424C5 AX)	TBD	Lead	100	99.9	No	Null	Mfr/ Vendor data	Null	No	Null
						Particulate Matter	100	99.98	No	Null	Mfr/ Vendor data	Null	No	Null
						PM < 2.5 micron	100	99.98	No	Null	Mfr/ Vendor data	Null	No	Null
						PM < 10 micron	100	99.98	No	Null	Mfr/ Vendor data	Null	No	Null
	TREA 55	Null	HEPA Filter - EQUI 84	TBD (TBD)	TBD	Particulate Matter	100	99.9	No	Null	Mfr/ Vendor data	Null	No	Null
						PM < 2.5 micron	100	99.9	No	Null	Mfr/ Vendor data	Null	No	Null

Commented [A74]: For TREA 55 – TREA 59 (TBD), Water Gremlin has decided to install Nederman HEPA filters on the spray coaters requiring PM control. Similar to the diecast machine Nederman HEPA filters, the manufacturer does not recommend opening the unit until indicated by one of the pressure gauges. Checks of the pressure gauges once each operating day will suffice for following manufacturer-recommended O&M procedures. The permit should be updated for COMG 14 HEPA filters accordingly.

						PM < 10 micron	100	99.9	No	Null	Mfr/ Vendor data	Null	No	Null

Other Controls

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

Subject Item Type	Subject Item ID	Delta Designation	Description	Manufacturer (Model #)	Installation Start Date	Pollutants Controlled	Capture Efficiency (%)	Destruction/ Collect Efficiency (%)	Subject to CAM?	Large or Other PSEU?	Efficiency Basis	Other Basis Explanation	Other operating parameters?	Other operating parameters description
101-High Efficiency Particulate Air Filter (HEPA)	TREA 56	Null	HEPA Filter - EQUI 88	TBD (TBD)	TBD	Particulate Matter	100	99.9	No	Null	Mfr/ Vendor data	Null	No	Null
						PM < 2.5 micron	100	99.9	No	Null	Mfr/ Vendor data	Null	No	Null
						PM < 10 micron	100	99.9	No	Null	Mfr/ Vendor data	Null	No	Null
	TREA 57	Null	HEPA Filter - EQUI 95	TBD (TBD)	TBD	Particulate Matter	100	99.9	No	Null	Mfr/ Vendor data	Null	No	Null
						PM < 2.5 micron	100	99.9	No	Null	Mfr/ Vendor data	Null	No	Null
						PM < 10 micron	100	99.9	No	Null	Mfr/ Vendor data	Null	No	Null
	TREA 58	Null	HEPA Filter - EQUI 219	TBD (TBD)	TBD	Particulate Matter	100	99	No	Null	Mfr/ Vendor data	Null	No	Null
						PM < 2.5 micron	100	99	No	Null	Mfr/ Vendor data	Null	No	Null
						PM < 10 micron	100	99	No	Null	Mfr/ Vendor data	Null	No	Null
	TREA 59	Null	HEPA Filter - EQUI 220	TBD (TBD)	TBD	Particulate Matter	100	99	No	Null	Mfr/ Vendor data	Null	No	Null
						PM < 2.5 micron	100	99	No	Null	Mfr/ Vendor data	Null	No	Null
						PM < 10 micron	100	99	No	Null	Mfr/ Vendor data	Null	No	Null
	TREA 60	Null	Nederman Filter 15N - STRU 1	Nederman (TBD)	TBD	Lead	95	70	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						Particulate Matter	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 2.5 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 10 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
	TREA 61	Null	Nederman Filter 1N - STRU 15	Nederman (TBD)	TBD	Lead	95	70	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						Particulate Matter	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman

						PM < 2.5 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman

Other Controls

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

Subject Item Type	Subject ItemID	Delta Designation	Description	Manufacturer (Model #)	Installation Start Date	Pollutants Controlled	Capture Efficiency (%)	Destruction/ Collect Efficiency (%)	Subject to CAM?	Large or Other PSEU?	Efficiency Basis	Other Basis Explanation	Other operating parameters?	Other operating parameters description
101-High Efficiency Particulate Air Filter (HEPA)	TREA 61	Null	Nederman Filter 1N - STRU 15	Nederman (TBD)	TBD	PM < 10 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
	TREA 62	Null	Nederman Filter 2N1 - STRU 16	Nederman (TBD)	TBD	Lead	95	70	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						Particulate Matter	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 2.5 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 10 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
	TREA 63	Null	Nederman Filter 2N2 - STRU 16	Nederman (TBD)	TBD	Lead	95	70	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						Particulate Matter	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 2.5 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 10 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
	TREA 64	Null	Nederman Filter 3N - STRU 17	Nederman (TBD)	TBD	Lead	95	70	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						Particulate Matter	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 2.5 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 10 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
	TREA 65	Null	Nederman Device 5N - STRU 74	Nederman (TBD)	TBD	Lead	95	70	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						Particulate Matter	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 2.5 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 10 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
	TREA 66	Null	Nederman Filter 6N -	Nederman (TBD)	TBD	Lead	95	70	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman

			STRU 20			Particulate Matter	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman

Other Controls

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

Subject Item Type	Subject ItemID	Delta Designation	Description	Manufacturer (Model #)	Installation Start Date	Pollutants Controlled	Capture Efficiency (%)	Destruction/ Collect Efficiency (%)	Subject to CAM?	Large or Other PSEU?	Efficiency Basis	Other Basis Explanation	Other operating parameters?	Other operating parameters description
101-High Efficiency Particulate Air Filter (HEPA)	TREA 66	Null	Nederman Filter 6N - STRU 20	Nederman (TBD)	TBD	PM < 2.5 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 10 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
	TREA 67	Null	Nederman Device 8N - STRU 75	Nederman (TBD)	TBD	Lead	95	70	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						Particulate Matter	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 2.5 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 10 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
	TREA 68	Null	Nederman Filter 9N - STRU 23	Nederman (TBD)	TBD	Lead	95	70	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						Particulate Matter	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 2.5 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 10 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
	TREA 69	Null	Nederman Filter 10N - STRU 24	Nederman (TBD)	TBD	Lead	95	70	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						Particulate Matter	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 2.5 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 10 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
	TREA 70	Null	Nederman Filter 11N - STRU 25	Nederman (TBD)	TBD	Lead	95	70	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						Particulate Matter	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 2.5 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 10 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman

	TREA 71	Null	Nederman Filter 12N1 - STRU 26	Nederman (TBD)	TBD	Lead	95	70	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman

Other Controls

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

Subject Item Type	Subject ItemID	Delta Designation	Description	Manufacturer (Model #)	Installation Start Date	Pollutants Controlled	Capture Efficiency (%)	Destruction/ Collect Efficiency (%)	Subject to CAM?	Large or Other PSEU?	Efficiency Basis	Other Basis Explanation	Other operating parameters?	Other operating parameters description
101-High Efficiency Particulate Air Filter (HEPA)	TREA 71	Null	Nederman Filter 12N1 - STRU 26	Nederman (TBD)	TBD	Particulate Matter	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 2.5 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 10 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
	TREA 72	Null	Nederman Filter 12N2 - STRU 26	Nederman (TBD)	TBD	Lead	95	70	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						Particulate Matter	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 2.5 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 10 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
	TREA 73	Null	Nederman Filter 16N - STRU 30	Nederman (TBD)	TBD	Lead	95	70	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						Particulate Matter	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 2.5 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 10 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
	TREA 74	Null	Nederman Filter 17N - STRU 31	Nederman (TBD)	TBD	Lead	95	70	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						Particulate Matter	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 2.5 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 10 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
	TREA 75	Null	Nederman Filter 18N - STRU 32	Nederman (TBD)	TBD	Lead	95	70	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						Particulate Matter	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 2.5 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman

						PM < 10 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman

Other Controls

AI ID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

Subject Item Type	Subject ItemID	Delta Designation	Description	Manufacturer (Model #)	Installation Start Date	Pollutants Controlled	Capture Efficiency (%)	Destruction/ Collect Efficiency (%)	Subject to CAM?	Large or Other PSEU?	Efficiency Basis	Other Basis Explanation	Other operating parameters?	Other operating parameters description
101-High Efficiency Particulate Air Filter (HEPA)	TREA 76	Null	Nederman Filter 19N - STRU 33	TBD (TBD)	TBD	Lead	95	70	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						Particulate Matter	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 2.5 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 10 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
	TREA 77	Null	Nederman Filter 20N - STRU 34	TBD (TBD)	TBD	Lead	95	70	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						Particulate Matter	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 2.5 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman
						PM < 10 micron	95	86.6	Null	Null	Test data	Null	Yes	Total destruct/collection efficiency for Smog-Hog plus Nederman

Electrostatic Precipitators

AIID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

Subject Item Type	Subject Item ID	SI Designation and Description	Manufacturer (Model #)	Installation Start Date	Pollutants Controlled	Capture Efficiency (%)	Destruction/ Collect Efficiency (%)	Subject to CAM? (Large or Other PSEU?)	Efficiency Basis	Other Basis Explanation	Using conditioning agent? (flow rate (gal/hr))	Min Fields Online	Total Power (kW)	Secondary Current (mA)	Voltage (kV)
010-Electrostatic Precipitator - High Efficiency	TREA 78	Null Smog Hog #5	Smog-Hog (SG-4S-H)	7/1/1997	Lead	Null	Null	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
					Particulate Matter	Null	Null	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
					PM < 2.5 micron	Null	Null	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
					PM < 10 micron	Null	Null	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
	TREA 79	Null Smog-Hog #8	Smog-Hog (SG-4S H)	1/1/1998	Lead	Null	Null	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
					Particulate Matter	Null	Null	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
					PM < 2.5 micron	Null	Null	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
					PM < 10 micron	Null	Null	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
012-Electrostatic Precipitator - Low Efficiency	TREA 1	CE002 Smog Hog #15	Smog-Hog (SG-4S H)	1/1/1999	Lead	95	86.3	No (Large or Other not applicable)	Test data	Null	Null	8	0.3	Null	Null
					Particulate Matter	95	97	No (Large or Other not applicable)	Test data	Null	Null	8	0.3	Null	Null
					PM < 10 micron	95	97	No (Large or Other not applicable)	Test data	Null	Null	8	0.3	Null	Null
	TREA 25	Null Smog Hog #1	Smog-Hog (SG-4X R/L)	1/1/1998	Lead	95	70	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
					Particulate Matter	95	86.6	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
					PM < 10 micron	95	86.6	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
	TREA 26	Null Smog Hog #2	Smog-Hog (SG-4X R/LP)	1/1/1998	Lead	95	70	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
					Particulate Matter	95	86.6	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
					PM < 10 micron	95	86.6	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
	TREA 27	Null Smog Hog #3	Smog-Hog (SG-4S H)	1/1/1995	Lead	95	70	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
					Particulate Matter	95	86.6	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
					PM < 10 micron	95	86.6	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
	TREA 30	Null Smog Hog #6	Smog-Hog (SH-4-PE-S)	1/1/1999	Lead	95	70	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
					Particulate Matter	95	86.6	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
					PM < 10 micron	95	86.6	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
	TREA 33	Null Smog Hog #9	Smog-Hog (SG-4S H)	1/1/1994	Lead	95	70	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null

					Particulate Matter	95	86.6	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null		
					PM < 10 micron	95	86.6	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null		

Electrostatic Precipitators

AIID (Name): 2005 (Water Gremlin Co)
Activity: IND20180001

Subject Item Type	Subject Item ID	SI Designation and Description	Manufacturer (Model #)	Installation Start Date	Pollutants Controlled	Capture Efficiency (%)	Destruction/ Collect Efficiency (%)	Subject to CAM? (Large or Other PSEU?)	Efficiency Basis	Other Basis Explanation	Using conditioning agent? (flow rate (gal/hr))	Min Fields Online	Total Power (kW)	Secondary Current (mA)	Voltage (kV)
012-Electrostatic Precipitator - Low Efficiency	TREA 34	Null Smog Hog #10	Smog-Hog (SG-4S H)	1/1/1994	Lead	95	70	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
					Particulate Matter	95	86.6	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
					PM < 10 micron	95	86.6	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
	TREA 35	Null Smog Hog #11	Smog-Hog (SG-4S H)	1/1/1994	Lead	95	70	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
					Particulate Matter	95	86.6	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
					PM < 10 micron	95	86.6	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
	TREA 36	Null Smog Hog #12	Smog-Hog (50-2222-12-0001)	1/5/2019	Lead	95	70	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
					Particulate Matter	95	86.6	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
					PM < 10 micron	95	86.6	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
	TREA 39	Null Smog Hog #16	Smog-Hog (SG-4S H)	1/1/1998	Lead	95	70	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
					Particulate Matter	95	86.6	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
					PM < 10 micron	95	86.6	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
	TREA 40	Null Smog Hog #17	Smog-Hog (SG-4S H)	1/1/1998	Lead	95	70	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
					Particulate Matter	95	86.6	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
					PM < 10 micron	95	86.6	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
	TREA 41	Null Smog Hog #18	Smog-Hog (SG-4S H)	1/1/1998	Lead	95	70	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
					Particulate Matter	95	86.6	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
					PM < 10 micron	95	86.6	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
	TREA 42	Null Smog Hog #19	Smog-Hog (SG-4S H)	1/1/1998	Lead	95	70	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
					Particulate Matter	95	86.6	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
					PM < 10 micron	95	86.6	No (Large or Other not applicable)	Test data	Null	Null	4	0.2	Null	Null
	TREA 43	Null Smog Hog #20	Smog-Hog (SG-4S H)	1/1/1998	Lead	95	70	No (Large or Other not applicable)	Test data	Null	Null	8	0.3	Null	Null
					Particulate Matter	95	86.6	No (Large or Other not applicable)	Test data	Null	Null	8	0.3	Null	Null
					PM < 10 micron	95	86.6	No (Large or Other not applicable)	Test data	Null	Null	8	0.3	Null	Null

SI Id	Sequence	Requirement
TFAC 1	1240	Permit Appendices: This permit contains appendices as listed in the permit Table of Contents. The Permittee shall comply with all requirements contained in the following appendices: Appendix A: Insignificant Activities and General Requirements; Appendix B: Maximum Material Content, Emissions Calculations Assumptions, and Analytical Methods for VOC, Water-Based, and Ultraviolet-Cured (UV) Coating Appendix C: NAAQS and AERA Modeling Parameters; Appendix D: Emission Factors for Lead Processing Units; Appendix E: Performance Test Recordkeeping; Appendix F: VOC Ambient Air Monitoring Plan; Appendix G: General Public Preclusion Plan; Appendix H: Minimum requirements for a revised VOC and TO-15 ambient monitoring; and Appendix I: Equipment Inventory at the time of permit issuance; Appendix J: 40 CFR pt. 60, subp. IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines; and Appendix K: 40 CFR pt. 60, subp. A - General Provisions. [Minn. R. 7007.0800, subp. 2(A) & (B)]
TFAC 1	1245	The Permittee must comply with Minn. Stat. 116.385. The Permittee may not use trichloroethylene (TCE) at its permitted facility including in any manufacturing, processing, or cleaning processes, except as described in Minn. Stat. 116.385, subd. 2(b) and 4. The permittee used TCE before the issuance of permit No, 12300341-101 and has replaced TCE; any chemical replacing TCE must be less toxic to human health and reviewed in a form determined and approved by the Commissioner of the Pollution Control Agency. This is a state-only requirement and is not enforceable by the U.S. Environmental Protection Agency (EPA) Administrator and citizens under the Clean Air Act. [Minn. R. 7007.0100, subp. 7(X), Minn. Stat. 116.385]
TFAC 1	1246	This permit establishes limits on the facility to keep it a minor source under New Source Review, Part 70, and NESHAPs. The Permittee cannot make any change at the source that would require a change to a Title I Condition or a synthetic minor limit that ensures the facility avoid a major source status under New Source Review, Part 70, and NESHAPs until a major permit amendment has been issued. This includes changes that might otherwise qualify as insignificant modifications and minor or moderate amendments. [Minn. R. 7007.0100, subp. 25(A), Minn. R. 7007.1500, subp. 1(C), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 63.2, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TFAC 1	1247	Equipment Labeling: The Permittee shall permanently affix a unique number to each emissions unit for tracking purposes. Each number shall correlate the unit to the appropriate Subject Item number used in this permit. The number can be affixed by placard, stencil, or other means. The number shall be maintained so that it is readable and visible at all times from a safe distance. If equipment is added, it shall be given a new unique number; numbers from replaced or removed equipment shall not be reused. [Minn. R. 7007.0800, subp. 2(A)]
TFAC 1	1248	Equipment Inventory: The facility equipment inventory at the time of permit issuance is listed in Appendix I. The Permittee shall maintain a written revision to Appendix I with a current list of all emissions units, operating monitors, and control equipment on site. The Permittee shall update the list in Appendix I to include any replaced, modified, or new equipment prior to making the change. The list shall correlate the units to the Subject Item numbers used in this permit and shall include the data on GI-04, GI-05B, GI-05C, and GI-05F. The date of construction shall be the date the change was made for replaced, modified, or new equipment. [Minn. R. 7007.0800, subp. 2(A)]

SI Id	Sequence	Requirement
TFAC 1	1260	PERMIT SHIELD: Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements. This permit shall not alter or affect the liability of the Permittee for any violation of applicable requirements prior to or at the time of permit issuance. [Minn. R. 7007.1800(A)(2)]
TFAC 1	1380	Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted. [Minn. R. 7011.0020]
TFAC 1	1390	Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated. [Minn. R. 7007.0800, subp. 16(J), Minn. R. 7007.0800, subp. 2(A) & (B)]
TFAC 1	1400	Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment and practices, and the records kept to demonstrate plan implementation. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 16(J)]
TFAC 1	1410	Operation Changes: In any shutdown, breakdown, or deviation the Permittee must immediately or as soon as possible considering plant and personnel safety take all practical steps to modify operations to reduce the emission of any regulated air pollutant. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment are permitted to operate. [Minn. R. 7019.1000, subp. 4]
TFAC 1	1420	Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150. [Minn. R. 7011.0150]
TFAC 1	1430	Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Minn. R. 7030.0010-7030.0080]
TFAC 1	1440	Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A). [Minn. R. 7007.0800, subp. 9(A)]
TFAC 1	1450	The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16. [Minn. R. 7007.0800, subp. 16]
TFAC 1	1460	Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in this permit. [Minn. R. ch. 7017]
TFAC 1	1470	Performance Test Notifications and Submittals: Performance Test Notification and Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due seven days before each Performance Test Performance Test Report: due 45 days aGer each Performance Test The Notification, Test Plan, and Test Report must be submitted in a format specified by the commissioner. [Minn. R. 7017.2017, Minn. R. 7017.2030, subps. 1-4, Minn. R. 7017.2035, subps. 1-2]
TFAC 1	1480	Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as stated in the MPCA's Notice of Compliance letter granting preliminary approval. Preliminary approval is based on formal review of a subsequent performance test on the same unit as specified by Minn. R. 7017.2025, subp. 3. The limit is final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025, subp. 3]

SI Id	Sequence	Requirement
TFAC 1	1490	Monitoring Equipment Calibration - The Permittee shall either: 1. Calibrate or replace required monitoring equipment every 12 months; or 2. Calibrate at the frequency stated in the manufacturer's specifications. For each monitor, the Permittee shall maintain a record of all calibrations, including the date conducted, and any corrective action that resulted. The Permittee shall include the calibration frequencies, procedures, and manufacturer's specifications (if applicable) in the Operations and Maintenance Plan. Any requirements applying to continuous emission monitors are listed separately in this permit. [Minn. R. 7007.0800, subp. 4(D)]
TFAC 1	1500	Operation of Monitoring Equipment: Unless noted elsewhere in this permit, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system. [Minn. R. 7007.0800, subp. 4(D)]
TFAC 1	1510	Recordkeeping: Retain all records at the stationary source, unless otherwise specified within this permit, for five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A). [Minn. R. 7007.0800, subp. 5(C)]
TFAC 1	1520	Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007.1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350, subp. 2), including records of the emissions resulting from those changes. [Minn. R. 7007.0800, subp. 5(B)]
TFAC 1	1530	If the Permittee determines that no permit amendment or notification is required prior to making a change, the Permittee must retain records of all calculations required under Minn. R. 7007.1200. For non-expiring permits, these records shall be kept for a period of five years from the date that the change was made. The records shall be kept at the stationary source for the current calendar year of operation and may be kept at the stationary source or office of the stationary source for all other years. The records may be maintained in either electronic or paper format. [Minn. R. 7007.1200, subp. 4]
TFAC 1	1610	Shutdown Notifications: Notify the commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the Permittee does not have advance knowledge of the shutdown, the Permittee must notify the commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in items A, B, and C of Minn. R. 7019.1000, subp. 3. At the time of notification, the owner or operator must inform the commissioner of the cause of the shutdown and the estimated duration. The owner or operator must notify the commissioner when the shutdown is over. [Minn. R. 7019.1000, subp. 3]
TFAC 1	1620	Breakdown Notifications: Notify the commissioner within 24 hours of a breakdown of more than one hour of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in items A, B, and C of Minn. R. 7019.1000, subp. 2. At the time of notification or as soon as possible thereafter, the Permittee must inform the commissioner of the cause of the breakdown and the estimated duration. The Permittee must notify the commissioner when the breakdown is over. [Minn. R. 7019.1000, subp. 2]

SI Id	Sequence	Requirement
TFAC 1	1630	Notification of Deviations Endangering Human Health or the Environment: Immediately after discovery of the deviation or immediately after when the deviation reasonably should have been discovered, notify the commissioner either orally or by e-mail, or telephone the state duty officer at 800-422-0798 or 651-649-5451, of any deviation from permit conditions that could endanger human health or the environment. [Minn. R. 7019.1000, subp. 1]
TFAC 1	1640	Notification of Deviations Endangering Human Health or the Environment Report: Within two working days of discovery, notify the commissioner in writing of any deviation from permit conditions that could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation. [Minn. R. 7019.1000, subp. 1]
TFAC 1	1650	The Permittee must submit a semiannual deviations report : Due semiannually, by the 30th of January and July. The first semiannual report submitted by the Permittee must cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. Submit this on form DRF-2 (Deviation Reporting Form). If no deviations have occurred, submit the signed report certifying that there were no deviations. [Minn. R. 7007.0800, subp. 6(A), Minn. R. 7007.0800, subp. 6(B)(2)]
TFAC 1	1660	Relocation Notification Form: due 48 hours before change in location. Submit notification on a form approved by the Commissioner. [Minn. R. 7007.0800, subp. 12(C)]
TFAC 1	1670	Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed. Upon adoption of a new or amended federal applicable requirement, and if there are three or more years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150 - 7007.1500]
TFAC 1	1680	Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H). Performance testing deadlines from the General Provisions of 40 CFR pt. 60 and pt. 63 are examples of deadlines for which the MPCA does not have authority to grant extensions and therefore do not meet the requirements of Minn. R. 7007.1400, subp. 1(H). [Minn. R. 7007.1400, subp. 1(H)]
TFAC 1	1700	The Permittee must submit a compliance certification : Due annually, by the 31st of January (for the previous calendar year). Submit this on form CR-04 (Annual Compliance Certification Report). This report covers all deviations experienced during the calendar year. If no deviations have occurred, submit the signed report certifying that there were no deviations. [Minn. R. 7007.0800, subp. 6(A), Minn. R. 7007.0800, subp. 6(D)]
TFAC 1	1703	Within 15 days of a request from the Commissioner, the Permittee must provide a complete summary of all performance tests required at the facility including the subject item, pollutant, most recent test date (if applicable), and the date of the next test in an approved format. [Minn. R. 7007.0800, subp. 16(L)]

SI Id	Sequence	Requirement
TFAC 1	1706	The Permittee shall submit an annual report by the 31st of January. The report shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). The report shall describe the changes made at the facility during the previous calendar year using the latest MPCA application forms. The report shall include information for any new, modified, or replaced Subject Items in the form of a revised Attachment 2 - Subject Item Summary. The report shall include the changes in emissions of any pollutants that have been listed as chemicals of potential interest (COPI) based on the current Air Emission Risk Analysis (AERA) Guidance. The description of the change must include the change in emissions and identification of the emission source that changed. The report shall be submitted with the annual Compliance Certification required by this permit. As part of the Annual Report, the Permittee shall verify and certify that the facility has maintained minor source status for New Source Review. [Minn. R. 7007.0500, subp. 3, Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TFAC 1	1730	Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance. Submit in a format specified by the Commissioner. [Minn. R. 7019.3000-7019.3100]
TFAC 1	1740	Emission Fees: due 30 days after receipt of an MPCA bill. [Minn. R. 7002.0005-7002.0085]
TFAC 1	1890	Modeled Parameters for PM10, PM2.5, NO2, and lead NAAQS: The parameters used in NAAQS modeling for Permit No. 12300341-101 are listed in Appendix C of this permit. The parameters describe the operation of the facility at maximum permitted capacity. The purpose of listing the parameters in the appendix is to provide a benchmark for future changes. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
TFAC 1	2110	Modeled Parameters for Air Emissions Risk Analysis (AERA): The parameters for 1,2-(trans-) Dichloroethylene and lead used in the AERA for Permit No. 12300341-101 are listed in Appendix C of this permit. The parameters describe the operation of the facility at maximum permitted capacity. The purpose of listing the parameters in the appendix is to provide a benchmark for future changes. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
TFAC 1	2111	Equivalent or Better Dispersion (EBD) Modeling Triggers (Modeling Submittal Not Required before the change): Changes that do not require a permit amendment or require an administrative permit amendment do not trigger the EBD Modeling Submittal requirement before the change can be made. The Permittee shall keep updated records on site of all modeled PM10, PM2.5, NO2, and lead parameters and emission rates listed in Appendix C. The updated EBD modeling results must demonstrate compliance with NAAQS for the modeled pollutant. The Permittee shall submit any changes to modeled parameters and emission rates with the next required modeling submittal. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
TFAC 1	2112	Updated AERA Triggers (AERA Submittal Not Required before the change): Changes that do not require a permit amendment or require an administrative permit amendment do not trigger the Updated AERA Submittal requirement before the change can be made. The Permittee shall keep updated records on site of all 1,2-(trans-) Dichloroethylene, lead, and other air toxics parameters and emission rates listed in Appendix C. The updated AERA results must demonstrate compliance with the health benchmarks for the modeled pollutants. The Permittee shall submit any changes to AERA parameters and emission rates with the next required AERA submittal. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
TFAC 1	2120	Equivalent or Better Dispersion (EBD) Modeling Triggers (Modeling Required): Any changes that affect any modeled PM10, PM2.5, NO2, and lead parameter or emission rate listed in Appendix C, or an addition to the information documented in Appendix C, trigger the EBD Remodeling Submittal requirement. This includes changes that do not require a permit amendment as well as changes that require any type of permit amendment. The updated EBD modeling results must demonstrate compliance with NAAQS for the modeled pollutant. The schedule for EBD Remodeling submittal is defined elsewhere in this permit. Changes made under the Administrative amendment process are excluded from this requirement. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]

SI Id	Sequence	Requirement
TFAC 1	2130	Updated AERA Triggers (AERA Required): Any changes that affect 1,2-(trans-) Dichloroethylene, lead, and other air toxics parameter or emission rate listed in Appendix C, or an addition to the information documented in Appendix C, or the health benchmarks for any of the evaluated chemical of concern have changed to more strict values, or there are new health benchmark values for chemicals of concern used at the facility, trigger the Updated AERA Submittal requirement. This includes changes that do not require a permit amendment as well as changes that require any type of permit amendment. The updated AERA results must demonstrate compliance with the health benchmarks for the modeled pollutants. The schedule for the revised AERA submittal is defined elsewhere in this permit. Changes made under the Administrative amendment process are excluded from this requirement. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
TFAC 1	2140	EBD Modeling Submittal at Reissuance: The Permittee shall submit an EBD Modeling Submittal with the permit reissuance application (due as stated elsewhere in this permit) that addresses any changes made during the permit term that did not require a permit amendment but that affected any modeled PM10, PM2.5, NO2, and lead parameter or emission rate documented in Appendix C, or an addition to the information documented in Appendix C and that did not trigger the EBD Modeling Triggers (Modeling Required) requirement. [Minn. R. 7007.0800, A) & (B, Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
TFAC 1	2150	Updated AERA Submittal at Reissuance: The Permittee shall submit an Updated AERA Submittal with the permit reissuance application (due as stated elsewhere in this permit) that addresses any changes made during the permit term that did not require a permit amendment but that affected any 1,2-(trans-) Dichloroethylene, lead, and other air toxics parameter or emission rate documented in Appendix C, or an addition to the information documented in Appendix C and that did not trigger the Updated AERA Triggers (AERA Required) requirement. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
TFAC 1	2160	EBD Modeling Submittal: For changes meeting the criteria in the EBD Modeling Triggers (Modeling Required) requirement, the Permittee shall submit an EBD modeling submittal in accordance with the current version of the MPCA Air Dispersion Modeling Guidance and shall wait for written approval (for major amendments, in the form of an issued permit amendment; for moderate amendments, in the form of a construction authorization letter) before making such changes. For changes that do not require a moderate or major amendment, but require a minor permit amendment, written approval of the EBD modeling may be given before permit issuance; however, this approval applies only to the EBD modeling and not to any other changes. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
TFAC 1	2170	Updated AERA Submittal: For changes meeting the criteria in the Updated AERA Triggers (AERA Required) requirement, the Permittee shall submit an updated AERA submittal in accordance with the current version of the MPCA Air Dispersion Modeling Guidance and shall wait for written approval (for major amendments, in the form of an issued permit amendment; for moderate amendments, in the form of a construction authorization letter) before making such changes. For changes that do not require a moderate or major amendment, but require a minor permit amendment, written approval of the updated AERA may be given before permit issuance; however, this approval applies only to the updated AERA and not to any other changes. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
TFAC 1	2180	EBD Modeling Submittal Content: The information submitted must include, for stack and vent sources, source emission rate, location, height, diameters, exit velocity, exit temperature, discharge direction, use of rain caps or rain hats, and, if applicable, locations and dimensions of nearby buildings. For non-stack/vent sources, this includes the source emission rate, location, size and shape, release height, and, if applicable, any emission rate scalars, and the initial lateral dimensions and initial vertical dimensions and adjacent building heights. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]

SI Id	Sequence	Requirement
TFAC 1	2190	Updated AERA Submittal Content: The information submitted must include, for stack and vent sources, source emission rate, location, height, diameters, exit velocity, exit temperature, discharge direction, use of rain caps or rain hats, and, if applicable, locations and dimensions of nearby buildings. For non-stack/vent sources, this includes the source emission rate, location, size and shape, release height, and, if applicable, any emission rate scalars, and the initial lateral dimensions and initial vertical dimensions and adjacent building heights. If this information is being submitted with a concurrent EBD modeling submittal, this information only needs to be listed once in the combined submittal. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
TFAC 1	2191	Outdated EBD Baseline Modeling: Prior to conducting the EBD analysis, the Permittee shall use the current version of the MPCA Air Dispersion Modeling Guidance to determine if the Baseline Modeling (the most recent refined modeling demonstration) is consistent with the current version of the MPCA Air Dispersion Modeling Guidance (not outdated). The Permittee may verify if the Baseline modeling is consistent with current Guidance during the approval process for the modeling protocol. If the Baseline Modeling is outdated, the Permittee shall update the Baseline Modeling to be consistent with the current version of the MPCA Air Dispersion Modeling Guidance. The updated modeling will become the new Baseline Modeling. This requirement does not require the Permittee to complete a new refined modeling demonstration using the revisions made for the EBD demonstration. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
TFAC 1	2193	Outdated Baseline AERA: Prior to conducting the AERA analysis, the Permittee shall use the current version of the MPCA Air Dispersion Modeling Guidance to determine if the Baseline AERA (the most recent AERA demonstration) is consistent with the current version of the MPCA Air Dispersion Modeling Guidance (not outdated). The permittee may verify if the Baseline AERA is consistent with current Guidance during the approval process for the modeling and AERA protocol. If the Baseline AERA is outdated, the Permittee shall update the Baseline AERA to be consistent with the current version of the MPCA Air Dispersion Modeling Guidance. The updated AERA will become the new Baseline AERA. This requirement does not require the Permittee to complete a new AERA using the revisions made for the EBD demonstration. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
TFAC 1	2194	EBD Modeling Results: The dispersion characteristics due to the revisions of the information in Appendix C must be equivalent to or better than the dispersion characteristics modeled in the most recent approved modeling submittal that shows compliance with NAAQS. The Permittee shall demonstrate this equivalency in the proposal. The requirements in this condition do not apply if the permittee has conducted refined modeling using the revised parameters and has demonstrated modeled compliance with the applicable emission limits. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
TFAC 1	21200	Updated AERA Results: The dispersion characteristics due to the revisions of the information in Appendix C must be equivalent to or better than the dispersion characteristics modeled in the most recent approved modeling submittal that shows modeled compliance with NAAQS and health benchmarks The Permittee shall demonstrate this equivalency in the proposal. The requirements in this condition do not apply if the permittee has conducted refined modeling using the revised parameters and has demonstrated compliance with the applicable emission limits. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]

SI Id	Sequence	Requirement
TFAC 1	21210	Computer Dispersion Modeling Triggers for PM10, PM2.5, NO2, and lead NAAQS: The Permittee shall conduct a refined remodeling analysis in accordance with the Computer Dispersion Modeling requirements of this permit and the current version of the MPCA Air Dispersion Modeling Guidance if: (1) the results of the EBD modeling analysis do not demonstrate equivalent or better dispersion characteristics; (2) a conclusion cannot readily be made about the dispersion, or (3) the criteria in the EBD Modeling Triggers requirement are met and the Permittee has previously conducted three successive EBD analyses using the same Baseline Modeling, unless written approval is obtained from MPCA to get an exception from this maximum number of allowed EBD analyses. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
TFAC 1	21220	Computer Dispersion Modeling/AERA Protocol: due 180 days after receipt of written MPCA request for PM10, PM2.5, NO2, and/or lead NAAQS, and/or AERA refined modeling. The Permittee shall submit a Computer Dispersion Modeling/AERA Protocol that is complete and approvable by MPCA by the deadline in this requirement. This protocol will describe the proposed modeling methodology and input data, in accordance with the current version of the MPCA Air Dispersion Modeling Guidance. The protocol must be based on projected operating conditions under the next permit term. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
TFAC 1	21300	Computer Dispersion Modeling/AERA Protocol: due 60 days after receipt of written MPCA request for revisions to the submitted protocol for PM10, PM2.5, NO2, and/or lead NAAQS, and/or AERA modeling. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
TFAC 1	21310	Computer Dispersion Modeling/AERA Results: due 180 days after receipt of written MPCA approval of Computer Dispersion Modeling Protocol for PM10, PM2.5, NO2, and/or lead NAAQS, and/or AERA. The Permittee shall submit a final Computer Dispersion Modeling Report that is complete and approvable by MPCA by the deadline in this requirement. The submittal shall adhere to the current version of the MPCA Air Dispersion Modeling Guidance and the approved Computer Dispersion Modeling Protocol. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
TFAC 1	21330	The Permittee shall continue to conduct VOC and TO-15 Ambient Air Monitoring that was required my MPCA before issuance of Permit No. 12300341-101. Ambient air monitoring shall be conducted in accordance with the MPCA-approved VOC ambient air monitoring plan in the Administrative Order dated January 17, 2020, and included in this permit as Appendix F. This monitoring plan shall continue until the time the MPCA approves a revised ambient monitoring plan. The permittee shall compile 24-hour VOC and TO-15 monitoring results by the last day of each month for the previous monitoring month. The results shall be reported to AQRoutineReport.PCA.state.mn.us and made available to MPCA at any other time. [Minn. R. 7007.0800, subp. 2, Minn. R. 7009.0010-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
TFAC 1	21331	The Permittee shall submit a revised ambient monitoring plan for VOC and TO-15 Ambient Air Monitoring due within 30 days of permit issuance. The revised ambient monitoring protocol shall address the following as described in Appendix H 1) Number and locations of monitoring sites following EPA siting requirements. 2) Sampling frequency 3) Data submittal frequency 4) TO-15 analytes include 1,2-(trans-) Dichloroethylene. [Minn. R. 7007.0800, subp. 2, Minn. R. 7009.0010-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
TFAC 1	21332	The Permittee shall submit a revised Ambient Monitoring Plan: due 60 calendar days after Date of Receipt of written MPCA request for revisions to the submitted Ambient Air Monitoring Plan for VOC and TO-15. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0010-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
TFAC 1	21333	The Permittee shall conduct VOC and TO-15 Ambient Air Monitoring due within 30 days following approval of revised ambient air monitoring plan. Ambient air monitoring shall be conducted in accordance with the MPCA-approved Revised VOC ambient air monitoring plan. The VOC and TO-15 ambient monitoring may not be interrupted during the transition of ambient monitoring to the revised plan. [Minn. R. 7007.0800, subp. 2, Minn. R. 7009.0010-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]

SI Id	Sequence	Requirement
TFAC 1	21338	Discontinuation of VOC Ambient Air Monitoring: The Permittee shall operate and maintain the VOC ambient air monitoring network according to the MPCA approved Ambient Air Monitoring Plan until the Commissioner determines that the following criteria have been met: 1) Twenty four months of ambient air monitoring is conducted pursuant to the Ambient Air Monitoring Plan approved by MPCA and implemented as prescribed elsewhere in this permit; 2) The twenty four months of ambient monitoring shall exclude periods when Water Gremlins shuts down t-DCE coating operations so that the length of the ambient monitoring period represents 24 months of measured ambient concentrations during actual coating operation with t-DCE containing materials. 3) There are no violations of the 1,2-(trans-) Dichloroethylene emission limit during the 24 months of actual coating operation; 4) The facility's 1,2-(trans-) Dichloroethylene emissions are at least 80 percent of the permitted limit during the ambient air monitoring period; 5) The probability of future long-term average 1,2-(trans-) Dichloroethylene concentrations being above health guidelines is less than 5 percent. The Permittee shall test this requirement by calculating a 95 percent upper confidence limit for the mean concentration at each monitoring site and compare the highest 95 percent upper confidence limit to 80 percent of the health benchmark for 1,2-(trans-) Dichloroethylene, as adapted from EPA Ambient Air Monitoring Network Assessment Guidance (Section 4.1). If the calculated 95 percent upper confidence limit is below 80 percent of the inhalation health benchmark for 1,2-(trans-) Dichloroethylene, ambient air monitoring may be discontinued if all other criteria are met; and 6) The permit contains limits that restrict t-DCE/VOC emissions, based on modeled concentrations below inhalation health benchmarks as approved by MPCA. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
TFAC 1	21340	General Public Preclusion Plan - Boundary Map Within 180 days after Permit Issuance, the Permittee shall use fencing, control access points, restriction signage, and remote monitoring as specified in Appendix G to maintain control over the fence line. Appendix G to this permit is a map that depicts the boundary at which the access of the general public can be controlled and compliance with the National Ambient Air Quality Standards (NAAQS) can be demonstrated. Appendix G identifies the forms of control the Permittee will use to restrict access to the general public along portions of the fence line. The general public does not include employees or other categories of people who have been directly authorized by the property owner to enter or remain on the property for a limited period of time and for a specific purpose. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7007.0800, subp. 4(D), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TFAC 1	21341	General Public Preclusion Plan This Plan shall, at a minimum, contain the following information: 1. A map of the facility that clearly displays the ambient air boundary. The map must indicate how access is precluded for each section of the boundary and must identify all access points (including roadways, power lines, rail spurs, etc.); 2. Locations where fencing will be implemented; 3. Restriction signage spacing (restriction signage may include notices such as "No Trespassing," "Private Property," "Do Not Enter," or "Restricted Area"); 4. Location of remote monitoring devices; 5. Operation and maintenance requirements of remote monitoring soGware and devices; 6. Contingency plans for downtime for remote monitoring soGware and devices; and 7. A response plan for when breaches occur. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7007.0800, subp. 4(D), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
TFAC 1	21342	Recordkeeping for Breaches of the Ambient Air Boundary Within three facility operating days of each observed breach, the Permittee shall document each instance that the ambient air boundary was breached by a member of the general public, including documenting the type, location, and duration of each breach. The Permittee shall identify and, within 30 days, implement measures to prevent future breaches, if necessary. A breach to the ambient boundary occurs when a member of the general public accesses property identified by the Permittee as non-ambient air other than by invitation, request or for other facility authorized business purposes. The observation of a breach may be direct or indirect. A direct observation includes witnessing a member of the general public on property identified as non-ambient air. Indirect observations rely on evidence of a breach, such as a cut fence, worn paths, motorized vehicle tracks, or other signs of disturbance by a member of the general public on property identified as non-ambient air. The Permittee shall report each breach, including all steps taken or changes made to the General Public Preclusion Plan to prevent additional breaches, in the semiannual Deviations Report required by this permit. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7007.0800, subp. 4(D), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
TFAC 1	21343	General Public Preclusion Plan - Fencing: The Permittee shall install and maintain fencing along ambient air boundary as depicted in Appendix G. The Permittee shall inspect the fence line once per quarter. The Permittee shall maintain records of inspection and required maintenance of fence line. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7007.0800, subp. 4(D), Minn. R. 7007.0800, subp. 5, Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TFAC 1	21345	General Public Preclusion Plan - Remote Monitoring: The Permittee shall operate and maintain remote monitoring equipment to maintain the effective fence line as depicted in Appendix G. The Permittee shall monitor at a minimum of once per day. Remote monitoring devices include but are not limited to fixed cameras and drone mounted cameras. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7007.0800, subp. 4(D), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TFAC 1	21346	The Permittee shall submit a monthly Ambient Air Monitoring Report: due within 30 calendar days following the last day of each month after Initial Startup of the VOC monitors in accordance with the MPCA-approved Monitoring Plan. The report shall be certified by the responsible official as defined in Minn.R. 7007.0100, subp. 21(A). The VOC monitoring results shall be submitted to AQRoutineReport@pca.state.mn.us within 30 calendar days following the last day of the month following startup of the VOC monitors. [Minn. R. 7007.0800, subps. 5-6]
TFAC 1	21347	The Permittee shall submit excess emission/downtime report: Due 30 days after the end of each calendar quarter following permit issuance. Submit this on form DRF-1 (Excess Emissions Reporting) as amended. The EER shall indicate all periods of monitor bypass and exceedances of the limit including those allowed by an applicable standard, i.e. during startup, shutdown, and malfunctions, as well as a summary of audit results and frequencies. If no excess emissions, downtime or bypasses occurred during the quarter, submit a signed report supplying the necessary monitor data needed to verify this. [Minn. R. 7017.1110, subps. 1-2]
TFAC 1	21348	The Permittee shall submit a notification of the actual Date of Initial Startup due 15 calendar days after Initial Startup Date of the VOC monitors, as described in the approved revised ambient air monitoring plan. [Minn. R. 7007.0800, subp. 6]

SI Id	Sequence	Requirement
TFAC 1	21349	The Permittee shall submit a 1,2-(trans-) Dichloroethylene VOC Solvent Usage Report due within 30 calendar days following the last day of each month. The report shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). The t-DCE VOC solvent usage report shall include tons per month of t-DCE containing solvent used and tons per month of t-DCE VOC emissions from 1,2-(trans-) Dichloroethylene containing solvent used. The report shall include any audit of t-DCE VOC solvent usage conducted during that month as a result of the t-DCE Quarterly Purchase Audit required elsewhere in this permit. The report shall be submitted to AQRoutineReport@pca.state.mn.us. This requirement to report on a monthly basis expires when MPCA approves discontinuation of VOC Ambient Air Monitoring. [Minn. R. 7007.0500, subp. 3, Minn. R. 7007.0800, subps. 5-6]
TFAC 1	21350	The Permittee shall submit a VOC Continuous Emission Monitor Report due within 30 calendar days following the last day of each month. The report shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). The VOC Continuous Emission Monitor report shall report daily emissions as measured ppmv-Wet of Total Hydrocarbon Concentration as 1,2-(trans-) Dichloroethylene based on daily CEM readings. The report shall include any audit of t-DCE VOC solvent usage conducted during that month as a result of the Reconciliation of Predicted Stack Concentration and CEMS Readings required elsewhere in this permit. The report shall be submitted to AQRoutineReport@pca.state.mn.us. This requirement to report on a monthly basis expires when MPCA approves discontinuation of VOC Ambient Air Monitoring. [Minn. R. 7007.0500, subp. 3, Minn. R. 7007.0800, subps. 5-6, Minn. Stat. 116.07, subd. 9(2)]
TFAC 1	23144	General Public Preclusion Plan - Control of Access: The Permittee shall control access at any road, trail equal to or wider than 50 inches, and all abandoned railroad grades. The Permittee shall secure these access points with a locked and/or monitored gate or other physical barrier precluding access by the general public. The permittee may submit an alternative plan for control access to replace these requirements. Upon MPCA approval, the permittee may follow the approved control access plan in lieu of the "General Public Preclusion Plan - Control of Access" requirements in this permit, The alternative plan to control access must be implemented within 180 days after MPCA approval. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7007.0800, subp. 4(D), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TFAC 1	23145	The permittee shall comply with National Primary and Secondary Ambient Air Quality Standards, 40 CFR pt. 50, and the Minnesota Ambient Air Quality Standards, Minn. R. 7009.0010 to 7009.0090. Compliance shall be demonstrated upon written request by the MPCA. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TFAC 1	23146	Commercial Disclosure Regarding Facility Emissions Into the Community: The Permittee shall conduct a meeting annually to disclose factual information to the community regarding facility operations, changes made or planned to reduce air emissions, management of hazardous materials and compliance with environmental permits and regulations. The Permittee shall provide the time, date, location, format, and agenda of the meeting to the MPCA 60 days before the meeting. [Minn. R. 7007.0800, subp. 2(B), Minn. Stat. 116.07, subd. 9(2)]
TFAC 1	23147	The responsible official that certifies the submittals required to be certified by rule and by this permit must meet the definition at Minn. R. 7007.0100, subp. 21. The Permittee must obtain approval of delegation of authority for the designated representative by the Commissioner as required by Minn. R. 7007.0100, subp. 21(A), (B) or (C). The certification statements must meet the requirements in Minn. R. 7007.0500 subp. 3. [Minn. R. 7007.0100, subp. 21, Minn. R. 7007.0800, subp. 6(A)]
COMG 1	3855	The Permittee shall submit an annual report by the 31st of January. The report shall document the VOC 365-day rolling sum calculations for the previous calendar year. The report shall be submitted with the annual Compliance Certification required by this permit. As part of the Annual Report, the Permittee shall verify and certify that the Facility has maintained minor source status for PSD and Part 70. [Minn. R. 7007.0800, subp. 2(A)]

SI Id	Sequence	Requirement
COMG 1	3900	The Permittee shall limit emissions of Volatile Organic Compounds <= 90.0 tons per year 12-month rolling sum to be calculated each operating day for the previous 12-month period as described later in this permit. All VOC-emitting equipment in COMG 1 is subject to this limit. VOC emissions shall be calculated based on the method described elsewhere in this permit. VOC content for each VOC-containing material shall be determined as described under the Material Content requirement in Appendix B. VOC emissions shall be calculated based on all VOC, Water Based and UV Coaters. VOC content for each VOC-containing material shall be determined as described under the Material Content requirement in Appendix B. The Permittee may take into account the VOCs from coating operations that exit the facility as waste as described under the Waste Credit for Calculation of VOC Emissions requirement in COMG 1. [Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 1	3910	The Permittee shall limit emissions of 1,2-(trans-) Dichloroethylene <= 32.6 tons per year 365-day rolling sum to be calculated each operating day for the previous 365-day period as described later in this permit. All 1,2-(trans-) Dichloroethylene-emitting equipment and operations at the facility is subject to this limit. 1,2-(trans-) Dichloroethylene emissions shall be calculated based on the methods described elsewhere in this permit. 1,2-(trans-) Dichloroethylene content in VOC-containing material shall be determined by assuming the entire VOC content is 1,2-(trans-) Dichloroethylene as described under the Material Content requirement in Appendix B. The 1,2-(trans-) Dichloroethylene emissions released outside the coating rooms must also be included as described elsewhere in this permit. The calculation of 1,2-(trans-) Dichloroethylene emissions may take into account the 1,2-(trans-) Dichloroethylene that exits the facility as waste as described under the Waste Credit requirement in COMG 1, but only if the Permittee separately quantifies the specific 1,2-(trans-) Dichloroethylene content in the waste material as described elsewhere in this permit. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
COMG 1	3920	1,2-(trans-) Dichloroethylene Quarterly Purchase Audit: Each calendar quarter, the Permittee shall audit purchase records and existing inventory of 1,2-(trans-) Dichloroethylene VOC-containing material, 1,2-(trans-) Dichloroethylene VOC-containing material usage records and keep records of each audit. If the estimates of use of 1,2-(trans-) Dichloroethylene VOC-containing material based on the purchase and inventory audit shows amounts of use 20 percent or greater than what was calculated based on daily usage logs described elsewhere in the permit, the Permittee shall review and correct as needed the procedures for the daily record keeping of use of 1,2-(trans-) Dichloroethylene VOC-containing material. The audit and records of corrections shall be made available for inspection upon request. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 1	4040	Daily Recordkeeping. On each day of operation, the Permittee shall calculate, record, and maintain a record of the total weight of each VOC-containing material used in coating operations. This shall be based on written usage logs. Written usage logs shall include all data and calculations used to obtain the recorded weight(s) of each VOC-containing material used. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
COMG 1	4050	Volatile Organic Compounds: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate, record, and maintain a record of the following for the previous operating day: 1) total weight of each VOC coating and solvent used in COMG 1 , in tons; 2) total weight of each VOC-containing material used in COMG 1 , including fresh solvent and solvent recovered on-site from the distiller, in tons; 3) total weight of VOC-containing material recovered on-site from the distiller, in tons; 4) total weight of water-based coating used in COMG 1 , in tons; 5) total weight of UV coating used in COMG 1 , in tons; 6) total weight of VOC-containing material that leaves the facility as waste according to the Waste Credit requirement if taking credit for compliance with the VOC emission limit, in tons; 7) daily VOC emissions for all equipment in COMG 1 for the previous operating day using the formulas specified elsewhere in this permit; and 8) 365-day rolling sum VOC emissions for all equipment in COMG 1 for the previous 365 day period by summing the daily VOC emissions data for the previous 365 days. [Minn. R. 7007.0800, subps. 4-5]
COMG 1	4055	1,2-(trans-) Dichloroethylene: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) total weight of each 1,2-(trans-) Dichloroethylene coating and solvent used in COMG 1 , in tons; 2) total weight of 1,2-(trans-) Dichloroethylene used in COMG 1, assuming the entire VOC content in the coating and solvent material is 1,2-(trans-) Dichloroethylene, in tons. This shall include fresh solvent and solvent recovered on-site from the distiller; 3) total weight of 1,2-(trans-) Dichloroethylene VOC-containing material recovered on-site from the distiller, in tons; 4) total weight of 1,2-(trans-) Dichloroethylene recovered from the distiller following the procedures in Appendix B to determine the 1,2-(trans-) Dichloroethylene content in material recovered on-site from the distiller, in tons; 5) total weight of 1,2-(trans-) Dichloroethylene VOC-containing material that left the facility as waste if taking credit for compliance with the 1,2-(trans-) Dichloroethylene emission limit, in tons; 6) total weight of 1,2-(trans-) Dichloroethylene that left the facility as waste following the procedures in Appendix B to determine the 1,2-(trans-) Dichloroethylene content if taking credit for compliance with the 1,2-(trans-) Dichloroethylene emission limit, in tons; 7) total weight of fugitive 1,2-(trans-) Dichloroethylene emissions based on measured indoor air concentrations in non-coating rooms using the concentrations and procedures in Appendix B, in tons; 8) total weight of 1,2-(trans-) Dichloroethylene emissions using the formulas specified in this permit; and 9) 365-day rolling sum of 1,2-(trans-) Dichloroethylene emissions for the previous 365 day period by summing the daily 1,2-(trans-) Dichloroethylene emissions data for the previous 365 days. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]

SI Id	Sequence	Requirement
COMG 1	4060	The Permittee shall calculate VOC emissions using the following equations: VOC (tons/month) = V - W V = (A1 x B1) + (A2 x B2) + (A3 x B3) +.....+ (C1 x D1) + (C2 x D2) + (C3 x D3).....+ (E1 x F1) + (E2 x F2) + (E3 x F3) +..... W = (G1 x H1) + (G2 x H2) + (G3 x H3) +..... Where: V = total weight of VOC used, in tons/month; A# = total weight of VOC-containing material used in COMG 1 based on daily usage logs, in tons/month. The VOC containing material weight must include the initial weight of prepared coating in each coater-specific tank as well as the weight of solvent added to each tank to thin out the coating; B# = weight percent VOC in A# defined in Appendix B, as a fraction. The weight percent for the formulation allowed by this permit is 0.90 lb VOC/lb solvent. The requirements to approve the use of other formulations and emission factors are defined elsewhere in this permit; C# = total weight of UV coating used in COMG 1 based on daily usage logs, in tons/month; D# = VOC emission factor for UV coating, as lb VOC/lb coating. The emission factor for UV coating allowed by this permit 0.0031 lb VOC/lb coating. The requirements to approve the use of other VOC emission factors are defined elsewhere in this permit. E# = total weight of each water-based coating used in COMG 1 based on daily usage logs, in tons/month; F# = VOC emission factor from water-based coating, as lb VOC/lb coating. The emission factor for water-based coating allowed by this permit 0.0057 lb VOC/lb coating. The requirements to approve the use of other VOC emission factors are defined elsewhere in this permit. W = total weight of VOC shipped in waste, in tons/month; G# = total weight of each VOC-containing waste material shipped based on daily usage logs, in tons/month. If the Permittee chooses to not take credit for waste shipments, this parameter would be zero; and H# = weight percent of VOC in G#, defined in Appendix B and the Waste Credit requirement in COMG 1, as a
COMG 1	4065	1,2-(trans-) Dichloroethylene: Daily Calculations. The Permittee shall calculate 1,2-(trans-) Dichloroethylene emissions using the following equations: 1,2-(trans-) Dichloroethylene (tons/day) = T - X T = (I1 x J1) + (I2 x J2) + (I3 x J3) +.....+ K X = (M1 x N1) + (M2 x N2) + (M3 x N3) +..... Where: T = total weight of 1,2-(trans-) Dichloroethylene used, in tons/day; I# = total weight of 1,2-(trans-) Dichloroethylene VOC-containing material used in COMG 1 based on daily usage logs, in tons/day. The 1,2-(trans-) Dichloroethylene VOC-containing material weight must include the initial weight of prepared coating in each coater-specific tank as well as the weight of 1,2-(trans-) Dichloroethylene VOC solvent added to each tank to thin out the coating; J# = weight percent of 1,2-(trans-) Dichloroethylene in I# defined in Appendix B, as a fraction. The weight percent for the formulation allowed by this permit is 0.90 lb 1,2-(trans-) Dichloroethylene /lb solvent. The requirements to approve the use of other formulations and emission factors are defined elsewhere in this permit; X = total weight of 1,2-(trans-) Dichloroethylene shipped in waste, in tons/day; M# = total weight of 1,2-(trans-) Dichloroethylene VOC-containing material shipped in waste based on daily usage logs, in tons/day. If the Permittee chooses to not take credit for waste shipments, this parameter would be zero; N# = weight percent of 1,2-(trans-) Dichloroethylene in M#, as a fraction, as determined in Appendix B and by the Waste Credit requirements elsewhere in this permit; K = default daily uncaptured 1,2-(trans-) Dichloroethylene emissions based on measured indoor air concentrations of non-coating rooms, in tons/day, as described elsewhere in this permit; and. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
COMG 1	4070	Daily Reporting: The Permittee shall continue to comply with the requirements of all effective enforcement documents until those documents are terminated by MPCA. As of issuance of Permit No. 12300341-101, these enforcement documents include the Stipulation Agreement executed March 1, 2019, and the Administrative Order signed January 17, 2020. These documents are included for reference as Attachments 5 and 6 to the TSD of this permit, respectively. [Minn. R. 7007.0800, subp. 2(A) & (B)]
COMG 1	4075	1,2-(trans-) Dichloroethylene: Default Uncaptured Emission Rate. The Default Uncaptured Emission Rate to be used based on measured indoor air concentrations in non-coating rooms for the purposes of calculating total daily 1,2-(trans-) Dichloroethylene emissions are defined as follows: Default 1,2-(trans-) Dichloroethylene Uncaptured Emission Rate = 0.00324 tons/day The Permittee shall add this value (K) to the total daily 1,2-(trans-) Dichloroethylene emissions following the requirements of this permit. The Permittee may change the default uncaptured emission rate following the requirements specified in this permit and the procedures in Appendix B. [Minn. R. 7007.0800, subps. 4-5]
COMG 1	4080	1,2-(trans-) Dichloroethylene: Changes to Default Uncaptured Emission Rates. The Permittee may change the default uncaptured emission rate based on approved indoor testing of non-coating rooms at the facility identified in Appendix B. The revised emission rates shall be calculated as follows: DFE = (Y1 x Z1) + (Y2 x Z2) + (Y3 x Z3) +..... where: DFE = Default Uncaptured Emission rate of 1,2-(trans-) Dichloroethylene, in tons/day; Y# = concentration of 1,2-(trans-) Dichloroethylene measured in each non-coating room at the facility described in Appendix B, in tons/actual cubic foot; and Z# = total actual flow rate of all vents associated with each non-coating room at the facility, in actual cubic feet/day. [Minn. R. 7007.0800, subps. 4-5]
COMG 1	4085	1,2-(trans-) Dichloroethylene: Reconciliation of Predicted Stack Concentration and CEMS (EQUI 176) Readings. By 4:30pm each coating operating day, the Permittee shall calculate and record the predicted stack concentration of 1,2-(trans-) Dichloroethylene versus 1,2-(trans-) Dichloroethylene usage the following equation: y = 0.1295x + 49.163 Where: y = predicted 1,2-(trans-) Dichloroethylene stack concentration, in ppmv-wet of Total Hydrocarbon Concentration as 1,2-(trans-) Dichloroethylene; x = 1,2-(trans-) Dichloroethylene usage, in pounds per day, from daily t-DCE containing VOC coating and solvent usage records. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. Stat. 116.07, subd. 9(2)]
COMG 1	4090	Reconciliation of Predicted Stack Concentration and CEMS Readings Audit: If the daily CEMS (EQUI 176) reading exceeds the predicted 1,2-(trans-) Dichloroethylene stack concentration for that day, in ppmv-wet, the Permittee shall immediately audit the 1,2-(trans-) Dichloroethylene-containing material usage and inventory records to determine the cause of this discrepancy and shall report this as a deviation. The Permittee shall implement needed corrections based on this review. The Permittee shall keep records of each calculation, whether a deviation was observed, and whether a correction was made and how the correction was made. [Minn. R. 7007.0800, subps. 4-6, Minn. Stat. 116.07, subd. 9(2)]

SI Id	Sequence	Requirement
COMG 1	6980	Material Content. VOC and Solids (PM, PM<10 microns, and PM<2.5 microns) contents in coating materials shall be determined by the Safety Data Sheet (SDS) or the Material Safety Data Sheet (MSDS) provided by the supplier for each material used. If a material content range is given on the SDS or the MSDS, the highest number in the range shall be used in all compliance calculations. If information is provided in the Regulatory Section of the SDS, the highest number in the range of that section may be used. Other alternative methods approved by the MPCA may be used to determine the VOC and solids contents. The Commissioner reserves the right to require the Permittee to determine the VOC and solids contents of any material, according to EPA or ASTM reference methods. If an EPA or ASTM reference method is used for material content determination, the data obtained shall supersede the SDS or the MSDS. [Minn. R. 7007.0800, subps. 4-5]
COMG 1	6990	Maximum Contents of Materials and Process Rate: The Permittee assumed certain worst-case contents of materials and process rates when determining the short-term potential to emit of units in COMG 1. These assumptions are listed in Appendix B and Appendix C of this permit. Increasing the process rate or changing to a material that has a higher content of any of the given pollutants, or an addition of a pollutant not listed in Appendix B or Appendix C, is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150. [Minn. R. 7005.0100, subp. 35a]
COMG 1	7000	Waste Credit for Calculation of VOC Emissions: If the Permittee elects to obtain credit for VOC shipped in waste materials, the Permittee shall either use item 1 or 2 to determine the VOC content for each credited shipment. 1) The Permittee shall analyze a representative composite sample of each waste shipment to determine the weight content of VOC, excluding water following the procedures in Appendix B. 2) The Permittee may use supplier data for raw materials to determine the VOC contents of each waste shipment, using the same content data used to determine the content of raw materials. If the waste contains several materials, the content of mixed waste shall be assumed to be the lowest VOC content of any of the materials. [Minn. R. 7007.0800, subps. 4-5]
COMG 1	7001	Waste Credit for Calculation of 1,2-(trans-) Dichloroethylene Emissions: If the Permittee elects to obtain credit for 1,2-(trans-) Dichloroethylene shipped in waste materials, the Permittee shall determine the specific content of 1,2-(trans-) Dichloroethylene in waste material, in weight percent, following the analysis procedure and frequency requirements in Appendix B. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 1	7002	Conversion of VOC Spray Coater(s) to VOC Dip/Drip Coater(s). The Permittee is authorized to modify existing spray VOC coaters to dip/drip application methods. A permit amendment may be needed if there is an increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the converted coater(s) shall comply with all requirements for VOC coaters described under COMG 1 and COMG 5, and be removed from COMG 4 and COMG 14 for compliance demonstration purposes. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]

SI Id	Sequence	Requirement
COMG 1	7003	Conversion of VOC Spray Coater(s) to Water-Based Spray Coater(s). The Permittee is authorized to modify existing spray VOC coaters to use Tacolyn 3570 water-based coating applied by spray methods. A permit amendment may be needed if there is an increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the converted coater(s) shall comply with all requirements for water-based coaters described under COMG 1, COMG 5, and COMG 8, and COMG 14, and be removed from COMG 4 for compliance demonstration purposes. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
COMG 1	7004	Conversion of VOC Spray Coater(s) to Water-Based Dip/Drip Coater(s). The Permittee is authorized to modify existing spray VOC coaters to use Tacolyn 3570 water-based coatings applied by dip/drip methods. A permit amendment may be needed if there is an increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the converted coater(s) shall comply with all requirements for water-based coaters described under COMG 1 and be removed from COMG 4, COMG 5, and COMG 14 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
COMG 1	7005	Conversion of VOC Spray Coater(s) to Ultraviolet (UV) Spray Coater(s). The Permittee is authorized to modify existing VOC spray coaters to use the WGCS 300 UV spray coating method. A permit amendment may be needed if there is an increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the converted coater(s) shall comply with all requirements for UV coaters described under COMG 1, COMG 2, COMG 5, and COMG 14, and shall be removed from COMG 4 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
COMG 1	7006	Conversion of VOC Dip/Drip Coater(s) to Water-Based Spray Coater(s). The Permittee is authorized to modify existing VOC dip/drip coaters to use Tacolyn 3570 water-based coatings applied by spray methods. A permit amendment may be needed if there is an increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the converted coater(s) shall comply with all requirements for water-based coaters described under COMG 1, COMG 5, COMG 8, and COMG 14 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]

SI Id	Sequence	Requirement
COMG 1	7007	Conversion of VOC Dip/Drip Coater(s) to Water-Based Dip/Drip Coater(s). The Permittee is authorized to modify existing VOC dip/drip coaters to use Tacolyn 3570 water-based coatings applied by dip/drip methods. A permit amendment may be needed if there is an increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the converted coater(s) shall comply with all requirements for water-based coaters described under COMG 1 and be removed from COMG 5 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
COMG 1	7010	Conversion of VOC Dip/Drip Coater(s) to Ultraviolet (UV) Spray Coater(s). The Permittee is authorized to modify existing VOC dip/drip coaters to use the WGCS 300 UV spray coating method. A permit amendment may be needed if there is an increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the converted coater(s) shall comply with all requirements for UV coaters described under COMG 1, COMG 2, COMG 5, and COMG 14 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
COMG 1	7011	The Permittee is prohibited from making any of the following changes without a major permit amendment to extend enforcement of the existing emission limit caps and emission calculation methods. The Permittee may submit to MPCA an applicability determination to confirm the need for a major amendment when planning any of the modifications listed below: 1) Converting any type of existing VOC coater to any type of VOC coater in a manner that increases potential emissions of any pollutant; 2) Replacing any type of existing VOC coater with any type of new VOC coater that results in increased emissions; 3) Adding any type of new VOC coater; 4) Converting any type of strictly water-based coater to any type of strictly VOC coater. This does not apply to existing hybrid coaters identified in Appendix B as able to apply water-based and/or VOC coatings; 5) Replacing any type of strictly water-based coater with any type of strictly VOC coater. This does not apply to existing hybrid coaters identified in Appendix B as able to apply water-based and/or VOC coatings; 6) Converting any type of existing UV coater to any type of VOC coater; or 7) Replacing any type of existing UV coater with any type of VOC coater. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]

SI Id	Sequence	Requirement
COMG 1	7012	Conversion of Water-Based Spray Coater(s) to Water-Based Dip/Drip Coater(s). The Permittee is authorized to modify existing water-based spray coaters to use Tacolyn 3570 water-based coatings applied by dip/drip methods. A permit amendment may be needed if there is an increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the converted coater(s) shall comply with all requirements for water-based coaters described under COMG 1 and be removed from COMG 8 and COMG 14 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
COMG 1	7013	Conversion of Water-Based Dip/Drip Coaters to Water-Based Spray Coaters. The Permittee is authorized to modify existing water-based dip/drip coaters to use Tacolyn 3570 water-based coatings applied by spray methods. A permit amendment may be needed if there is an increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the converted coater(s) shall comply with all requirements for water-based coaters described under COMG 1, COMG 5, COMG 8, and COMG 14 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
COMG 1	7014	Conversion of Water-Based Spray Coater(s) to Ultraviolet (UV) Spray Coater(s). The Permittee is authorized to modify water-based spray coaters to use the WGCS 300 UV spray coating method. A permit amendment may be needed if there is an increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the converted coater(s) shall comply with all requirements for UV coaters described under COMG 1, COMG 2, COMG 5, and COMG 14, and be removed from COMG 8 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
COMG 1	7015	Conversion of Water-Based Dip/Drip Coater(s) to Ultraviolet (UV) Spray Coater(s). The Permittee is authorized to modify water-based dip/drip coaters to use the WGCS 300 UV spray coating method. A permit amendment may be needed if there is an increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the converted coater(s) shall comply with all requirements for UV coaters described under COMG 1, COMG 2, COMG 5, and COMG 14 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]

SI Id	Sequence	Requirement
COMG 1	7016	Replacement of Existing Water-Based Spray Coater(s) and Addition of New Water-Based Spray Coater(s). The Permittee is authorized to replace existing water-based spray coaters with new water-based spray coaters, and add additional new water-based spray coaters. A permit amendment may be needed if there is an increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the new coater(s) shall comply with all requirements for water-based spray coaters described under COMG 1, COMG 5, COMG 8, and COMG 14 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
COMG 1	7017	Replacement of Existing Water-Based Dip/Drip Coater(s). Change of Location of Water-Based Dip/Drip Coater(s) Outside the Coating Rooms Exhausting Through STRU 73, and Addition of New Water-Based Dip/Drip Coater(s). The Permittee is authorized to replace existing water-based dip/drip coaters with new water-based dip/drip coaters, or change the location of existing water-based dip/drip coaters to a location outside the coating rooms exhausting through STRU 73, or install new water-based dip/drip coaters. A permit amendment may be needed if there is an increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the new coater(s) shall comply with all requirements for water-based coaters described under COMG 1 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
COMG 1	7018	Conversion of Ultraviolet (UV) Spray Coater(s) to Water-Based Spray Coater(s). The Permittee is authorized to modify existing UV coaters to use water-based coaters with spray application methods. A permit amendment may be needed if there is an increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the converted coater(s) shall comply with all requirements for water-based coaters described under COMG 1, COMG 5, COMG 8, and COMG 14, and be removed from COMG 2 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
COMG 1	7019	Conversion of Ultraviolet (UV) Spray Coater(s) to Water-Based Dip/Drip Coater(s). The Permittee is authorized to modify existing UV coaters to use water-based coaters with dip/drip application methods. A permit amendment may be needed if there is an increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the converted coater(s) shall comply with all requirements for water-based coaters described under COMG 1, and be removed from COMG 2, COMG 5, and COMG 14 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]

SI Id	Sequence	Requirement
COMG 1	7020	Replacement of Existing UV Spray Coater(s) and Addition of New UV Spray Coater(s). The Permittee is authorized to replace existing UV coaters with new UV coaters, and add additional new UV coaters. A permit amendment may be needed if there is an increase of regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the new coater(s) shall comply with all requirements for UV coaters described under COMG 1, COMG 2, COMG 5, and COMG 14 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
COMG 1	7021	Replacement of Existing VOC Dip/Drip Coater(s). The Permittee is authorized to replace existing VOC dip/drip coater with new VOC dip/drip coater of equal or lower design capacity so that there is no increase of potential emissions of t-DCE. A permit amendment may be needed if there is an increase of other regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the new coater(s) shall comply with all requirements for VOC Dip/Drip coaters described under COMG 1 and COMG 5 for compliance demonstration purposes. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.385, subd. 3]
COMG 1	7022	Replacement of Existing VOC spray Coater(s). The Permittee is authorized to replace existing VOC spray coater with new VOC dip/drip coater of equal or lower design capacity so that there is no increase of potential emissions of t-DCE or PM10 or PM2.5. A permit amendment may be needed if there is an increase of other regulated pollutants based on the design capacity of the modified equipment, the change will be subject to a newly applicable requirement, or there are revisions to limits or the monitoring and recordkeeping in this permit. If a permit amendment is required for this change, the Permittee shall apply for and obtain the appropriate permit amendment before making the change, as applicable. If no permit amendment is needed, the Permittee shall notify the Agency within 30 days before the change is implemented as required elsewhere in this permit. On the first day of operation, the new coater(s) shall comply with all requirements for VOC spray coaters described under COMG 1, COMG 5, COMG 4 and COMG 14 for compliance demonstration purposes. [Minn. R. 7007.0800, subp. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
COMG 1	7023	VOC Solvent Formulation: The Permittee shall limit VOC solvent use to the formulation described in Appendix B of this permit. For authorization to use alternative VOC solvents with formulations that increase emissions of chemicals identified under the Toxicological or Ecological Information section of the Safety Data Sheet, or that add new chemicals not identified in the Toxicological or Ecological Information section of the Safety Data Sheet, or that increase the VOC content above 90 percent (by weight), the Permittee shall submit a major amendment with a revised Air Emissions Risk Analysis (AERA) following procedures as required under Minn. R. 7007.1500. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
COMG 1	7024	Water-Based Coating Formulation: The Permittee shall limit use of water-based coating to the formulation described in Appendix B of this permit. For authorization to use other water-based coatings with formulations that increase emissions of any chemical identified under the Toxicological or Ecological Information section of the Safety Data Sheet, or that add new chemicals not identified in the Toxicological or Ecological Information section of the Safety Data Sheet, the Permittee shall submit a major amendment following procedures as required under Minn. R. 7007.1500. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]

SI Id	Sequence	Requirement
COMG 1	7025	Ultraviolet (UV) Coating Formulation: The Permittee shall limit use of UV coating to the formulation described in Appendix B of this permit. For authorization to use other UV coatings with formulations that increase emissions of any chemical identified under the Toxicological or Ecological Information section of the Safety Data Sheet, or that add new chemicals not identified in the Toxicological or Ecological Information section of the Safety Data Sheet, the Permittee shall submit a major amendment following procedures as required under Minn. R. 7007.1500. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
COMG 1	7026	The Permittee is prohibited from using any coating that contains any hazardous air pollutant (HAP), including the target HAPs as defined under 40 CFR Section 63.11180. The Permittee shall keep records that describe the HAP content in each coating used based on manufacturing data or coating analysis as prescribed in Appendix B. [Minn. R. 7007.0800, subp. 2(A)]
COMG 1	7027	VOC Coater Installation Requirements: The Permittee shall install and maintain each VOC coater to meet the following requirements: 1) Non-table top coaters shall be fitted with a stainless steel catch pan designed to catch and minimize spills of coating material and any other contaminants associated with the coating process; 2) Table-top coaters shall be placed in a catch pan or other secondary containment vessel designed to catch and minimize spills of coating material and any other contaminants associated with the coating process; and 3) Non-table top coaters shall be enclosed on all sides, including the top. Concrete walls may not be utilized as part of the coater enclosure. [Minn. R. 7007.0800, subp. 2(A) & (B)]
COMG 1	7028	Battery Terminal Post Coaters: Daily Maintenance. At the end of each shift on each operating day, the Permittee shall inspect each VOC, water-based, and UV coater in COMG 1 for coating spills and other materials in coater catch pans, secondary containment, and/or the floor. The Permittee shall clean and dispose of any coating material, hazardous waste, or other hazardous substance discovered in coater catch pans, secondary containment, or the floor in accordance with applicable state and local hazardous waste, solid waste, recycling and reuse regulations, and the material handling recommendations from the manufacturer of the coatings and solvents used. The Permittee shall keep records of coaters cleaned and corrective actions taken to prevent spills. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. ch. 7045]
COMG 1	7029	Coating Transfer: The Permittee shall perform all transfers of VOC solvent and VOC-containing materials, including mixing of coating formulations, inside a coating room meeting the requirements of COMG 5. Transfer of VOC-containing materials via open containers outside the coating room including, but not limited to buckets, beakers, etc., is prohibited. [Minn. R. 7007.0800, subp. 2(A) & (B)]
COMG 1	7030	VOC-Containing Material Storage: The Permittee shall keep lids securely in place on all VOC-containing material storage and transfer containers while not in active use. [Minn. R. 7007.0800, subp. 2(A) & (B)]
COMG 1	7031	The Permittee shall submit a notification: Due 30 calendar days before addition, replacement, or conversion of coaters authorized under COMG 1. The notification shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). The notification shall include the planned date for beginning of operations and the following forms: 1) Coaters not required to comply with COMG 5: MPCA forms GI-02, GI-03, GI-04 and GI-05B 2) Coaters required to comply with COMG 5: MPCA forms GI-05B and GI-05A, if control equipment is required under COMG 2, COMG 4 or COMG 8. [Minn. R. 7007.0500, subp. 3, Minn. R. 7007.0800, subps. 5-6]
COMG 1	21346	The Permittee shall submit an annual report by the 31st of January. The report shall document the 1,2-(trans-) Dichloroethylene VOC 365-day rolling sum calculations for the previous calendar year. The report shall include the results of the 1,2-(trans-) Dichloroethylene VOC Quarterly Purchase Audits required elsewhere in this permit. The report shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). The report shall be submitted with the annual Compliance Certification required by this permit. As part of the Annual Report, the Permittee shall verify and certify that the Facility has maintained minor source status for PSD and Part 70. [Minn. R. 7007.0500, subp. 3, Minn. R. 7007.0800, subp. 2]

SI Id	Sequence	Requirement
COMG 1	21347	The Permittee shall submit a notification due 30 calendar days before replacement of control equipment authorized under COMG 11. The notification shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). The notification shall include the planned date for beginning of operations and forms GI-05A. [Minn. R. 7007.0500, subp. 3, Minn. R. 7007.0800, subps. 5-6]
COMG 1	21348	The Permittee shall submit a notification due 30 calendar days before replacement of control equipment authorized under COMG 12. The notification shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). The notification shall include the planned date for beginning of operations and forms GI-05A. [Minn. R. 7007.0500, subp. 3, Minn. R. 7007.0800, subps. 5-6]
COMG 1	21349	The Permittee shall submit a notification due 30 calendar days before replacement of control equipment authorized under COMG 14. The notification shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). The notification shall include the planned date for beginning of operations and forms GI-05A. [Minn. R. 7007.0500, subp. 3, Minn. R. 7007.0800, subps. 5-6]
COMG 2	3941	The Permittee shall install, operate and maintain each ultraviolet (UV) battery terminal post coater subject to COMG 2 requirements inside a coating room meeting the requirements of COMG 5. This requirement does not apply to EQUI 82, EQUI 117, or EQUI 240. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 2	3942	The Permittee shall vent emissions from each ultraviolet (UV) battery terminal post coater subject to COMG 2 requirements to control equipment meeting the requirements of COMG 14 whenever each ultraviolet (UV) battery terminal post coater operates. This requirement does not apply to EQUI 82, EQUI 117, or EQUI 240. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 2	3943	Each ultraviolet (UV) battery terminal post coater subject to COMG 2 requirements is subject to the requirements in COMG 1 except as noted within COMG 1. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 2	3944	Each ultraviolet (UV) battery terminal post coater operated at the facility is subject to the requirements in COMG 5. This requirement does not apply to EQUI 117 and EQUI 240. [Minn. R. 7007.0800, subp. 2(A) & 2(B), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
COMG 2	3945	The Permittee is prohibited from using any coating that contains any hazardous air pollutant (HAP), including the target HAPs as defined under 40 CFR Section 63.11180. [Minn. R. 7007.0800, subp. 2(A)]
COMG 2	3970	Daily Recordkeeping. On each day of operation, the Permittee shall calculate, record, and maintain a record of the total quantity of each coating and other solids-containing material, including the solids content of each coating (as a mass fraction), used by each coater in COMG 2. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 2	3980	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate, record, and maintain a record of the following for the previous operating day using the daily usage records: 1) Total weight of UV coating used by each unit in COMG 2, in pounds/day; and 2) Daily average hourly emissions of PM10 and PM2.5 from all coaters in COMG 2 as determined elsewhere in this permit, in pounds/hour. This record shall also include solids contents of each material as determined by the Material Content requirement of this permit. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
COMG 2	4000	PM < 10 micron: Daily Calculations. The Permittee shall calculate PM10 emissions from COMG 2 using the following equations: PM10UV = [TPM10UV (uncontrolled) + TPM10UV (controlled)] / 24 TPM10UV (uncontrolled) = [(KUV1 x LUV1) + (KUV2 x LUV2) + (KUV3 x LUV3)] TPM10UV (controlled) = [(KUV1 x LUV1) + (KUV2 x LUV2) + (KUV3 x LUV3)] x (1-CE1) where: PM10UV = daily average PM10 emissions from COMG 2, in pounds/hour; TPM10UV = total daily PM10 emissions from each EQUI in COMG 2, in pounds/day; KUV# = total weight of coating used in COMG 2 based on daily usage logs, in pounds/day; and LUV# = uncontrolled PM10 emission factor, in pounds PM10 per pound of coating, listed in Appendix B, as a fraction. Other uncontrolled emission factors allowed by this permit shall be based on the most recent MPCA-approved stack test results performed according to approved replicable methodology (ARM) requirements; and CE1 = minimum PM10 control efficiency required by COMG 14 for the coaters required to be controlled, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
COMG 2	4020	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate PM2.5 emissions from COMG 2 using the following equations: PM2.5UV = TPM2.5UV (uncontrolled) + TPM2.5UV (controlled)] / 24 TPM2.5UV (uncontrolled) = [(KUV1 x PUV1) + (KUV2 x PUV2) + (KUV3 x PUV3)] TPM2.5UV (controlled) = [(KUV1 x PUV1) + (KUV2 x PUV2) + (KUV3 x PUV3)] x (1-CE2) where: PM2.5UV = daily average PM2.5 emissions from COMG 2, in pounds/hour; TPM2.5UV = total daily PM2.5 emissions from each EQUI in COMG 2, in pounds/day; KUV# = total weight of coating used in COMG 2 based on daily usage logs, in pounds/day; and PUV# = uncontrolled PM2.5 emission factor, in pounds PM2.5 per pound of coating, listed in Appendix B, as a fraction. Other uncontrolled emission factors allowed by this permit shall be based on the most recent MPCA-approved stack test results performed according to approved replicable methodology (ARM) requirements; and CE2 = minimum PM2.5 control efficiency required by COMG 14 for the coaters required to be controlled, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
COMG 2	4030	Maximum Contents of Materials and Process Rate: The Permittee assumed certain worst-case contents of materials and process rates when determining the short-term potential to emit of units in COMG 2. These assumptions are listed in Appendix B of this permit. Increasing the process rate or changing to a material that has a higher content of any of the given pollutants, or an addition of a pollutant not listed in Appendix B, is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150. [Minn. R. 7005.0100, subp. 35a]
COMG 2	4040	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of coating in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of coating, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
COMG 2	7000	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
COMG 2	7001	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
COMG 2	7002	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of coating in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of coating, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 2	7003	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
COMG 2	7004	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
COMG 4	1	The Permittee shall install, operate and maintain each VOC spray battery terminal post coater subject to COMG 4 requirements inside a coating room meeting the requirements of COMG 5. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 4	2	The Permittee shall vent emissions from each VOC spray battery terminal post coater subject to COMG 4 requirements to control equipment meeting the requirements of COMG 14 whenever each VOC spray battery terminal post coater operates. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 4	3	Each VOC spray battery terminal post coater subject to COMG 4 requirements is subject to the requirements in COMG 1. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 4	4	The Permittee is prohibited from using any coating that contains any hazardous air pollutant (HAP), including the target HAPs as defined under 40 CFR Section 63.11180. [Minn. R. 7007.0800, subp. 2(A)]
COMG 4	3860	Daily Recordkeeping. On each day of operation, the Permittee shall calculate, record, and maintain a record of the total quantity of each coating and other solids-containing material, including the solids content of each coating (as a mass fraction), used by each coater in COMG 4. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
COMG 4	3980	Particulate Matter: Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate, record, and maintain a record of the following for the previous operating day using the daily usage records: 1) Total weight of VOC coating used by each unit in COMG 4, in pounds/day; and 2) Daily average hourly emissions of PM10 and PM2.5 from all coaters in COMG 4 as determined elsewhere in this permit, in pounds/hour. This record shall also include solids contents of each material as determined by the Material Content requirement of this permit. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 4	4010	PM < 10 micron: Daily Calculations. The Permittee shall calculate PM10 emissions from COMG 4 using the following equations: PM10VOC = TPM10VOC/24 TPM10VOC = [(IVOC1 x JVOC1) + (IVOC2 x JVOC2) + (IVOC3 x JVOC3)] x (1-TE) x (1-CE1) where: PM10VOC = daily average PM10 emissions from COMG 4, in pounds/hour; TPM10VOC = total daily PM10 emissions from each EQUI in COMG 4, in pounds/day; IVOC# = total weight of coating used in COMG 4 based on daily usage logs, in pounds/day; and JVOC# = solids content of coating used in IVOC#, in weight percent; TE = minimum transfer efficiency allowed by the permit as of permit issuance (65 percent). Other transfer efficiencies allowed by this permit shall be based on the most recent MPCA-approved stack test results according to approved replicable methodology (ARM) requirements; and CE1 = minimum PM10 control efficiency required by COMG 14, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
COMG 4	4020	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate PM2.5 emissions from COMG 4 using the following equations: PM2.5VOC = TPM2.5VOC/24 TPM2.5VOC = [(IVOC1 x JVOC1) + (IVOC2 x JVOC2) + (IVOC3 x JVOC3)] x (1-TE) x (1-CE2) where: PM2.5VOC = daily average PM10 emissions from COMG 4, in pounds/hour; TPM2.5VOC = total daily PM2.5 emissions from each EQUI in COMG 4, in pounds/day; IVOC# = total weight of coating used in COMG 4 based on daily usage logs, in pounds/day; and JVOC# = solids content of coating used in IVOC#, in weight percent; TE = minimum transfer efficiency allowed by the permit as of permit issuance (65 percent). Other transfer efficiencies allowed by this permit shall be based on the most recent MPCA-approved stack test results according to approved replicable methodology (ARM) requirements; and CE2 = minimum PM2.5 control efficiency required by COMG 14, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
COMG 4	4030	Material Content. Solids (PM, PM<10 microns, and PM<2.5 microns) contents in coatings and other materials used in COMG 4 shall be determined by the Safety Data Sheet (SDS) or the Material Safety Data Sheet (MSDS) provided by the supplier for each material used. If a material content range is given on the SDS or the MSDS, the highest number in the range shall be used in all compliance calculations. If there is information provided in the Regulatory Section of the SDS, the highest number in the range of that section may be used. Other alternative methods approved by the MPCA may be used to determine the solids content. The Commissioner reserves the right to require the Permittee to determine the solids content of any material, according to EPA or ASTM reference methods. If an EPA or ASTM reference method is used for material content determination, the data obtained shall supersede the SDS or the MSDS. [Minn. R. 7007.0800, subp. 4-5]

SI Id	Sequence	Requirement
COMG 4	4040	Maximum Contents of Materials and Process Rate: The Permittee assumed certain worst-case contents of materials and process rates when determining the short-term potential to emit of units in COMG 4. These assumptions are listed in Appendix B of this permit. Increasing the process rate or changing to a material that has a higher content of any of the given pollutants, or an addition of a pollutant not listed in Appendix B, is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150. [Minn. R. 7005.0100, subp. 35a]
COMG 4	19821	Transfer efficiency for PM < 10 micron: Protocol for Re-Setting the Transfer efficiency Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission rates in pound PM10 per hour and transfer efficiency in pound PM10 per pound of solids (as applied) as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per hour and pound of coating solids as applied in the performance test report required by Minn. R. 7017.2035, subp. 1. The transfer efficiency for PM < 10 micron used for calculating emissions shall be re-set to the 3-hour average transfer efficiency in pound PM10 per pound of coating solids as applied, measured during the most recent MPCA-approved emission factor performance test. The new transfer efficiency for PM < 10 micron: used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subp. 2(A) & (B) , Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 4	19822	Transfer efficiency for PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Transfer efficiency for PM < 10 micron Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
COMG 4	19823	Transfer efficiency for PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
COMG 4	19824	Transfer efficiency for PM < 2.5 micron: Protocol for Re-Setting the Transfer efficiency Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission rates in pound PM2.5 per hour and transfer efficiency in pound PM2.5 per pound of solids (as applied) as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per hour and pound of coating solids as applied in the performance test report required by Minn. R. 7017.2035, subp. 1. The transfer efficiency for PM < 2.5 micron used for calculating emissions shall be re-set to the 3-hour average transfer efficiency in pound PM2.5 per pound of coating solids as applied, measured during the most recent MPCA-approved emission factor performance test. The new transfer efficiency for PM < 2.5 micron: used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 4	19825	Transfer efficiency for PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Transfer efficiency for PM < 2.5 micron Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]

SI Id	Sequence	Requirement
COMG 4	19826	Transfer efficiency for PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
COMG 5	1	The Permittee shall limit Coating Room Pressure Drop <= -0.007 inches of water, as established in Method 204 of appendix M to 40 CFR part 51. Pressure drop across the established enclosure shall be monitored at all times as described elsewhere in this permit. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 5	2	The Permittee shall vent emissions from each EQUI subject to COMG 5 requirements to a stack/vent meeting the requirements of STRU 73 whenever each EQUI in COMG 5 operates. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 5	3	The Permittee shall operate and maintain each individual coating room the North Building as permanent total enclosures that meet the criteria of Method 204 of appendix M, 40 CFR pt. 51. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
COMG 5	4	Coating Room Pressure Drop Continuous Monitoring Devices: The Permittee shall install, operate, and maintain a pressure drop monitoring system (pressure drop gauge EQUI 169, EQUI 170 and EQUI 171 and building management system EQUI 168) for each enclosure meeting the following requirements and maintain records of compliance with these requirements: (1) Complete a minimum of one cycle of operation for each successive 15-minute period having a minimum of four equally spaced successive cycles of CPMS operation in one hour; (2) Determine the average of all recorded readings for each successive 3-hour period of the emission capture system and add-on control device operation; (3) Record the results of each inspection, calibration, and validation check of the pressure drop gauge; (4) Maintain the pressure drop gauge at all times and have available necessary parts for routine repairs of the monitoring equipment; (5) Operate the pressure drop gauge and collect pressure drop data at all times that a coating operation is operating, except during monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, if applicable, calibration checks and required zero and span adjustments); (6) Do not use data recorded during monitoring malfunctions, associated repairs, out-of-control periods, or required quality assurance or control activities when calculating data averages. Use all the data collected during all other periods in calculating the data averages for determining compliance with the emission capture system and add-on control device operating limits;
		(7) Locate the pressure drop gauge(s) in or as close to a position that provides a representative measurement of the pressure drop across each monitored enclosure (each coating room); (8) Use a pressure drop gauge with an accuracy of at least five percent of the minimum pressure drop to be maintained. (9) Perform an initial calibration of the pressure drop gauge according to the manufacturer's requirements; (10) Conduct a validation check before initial operation or upon relocation or replacement of a pressure drop gauge. Validation checks include comparison of pressure drop gauge values to calibrated pressure measurement devices or to pressure simulation using calibrated pressure sources; (11) Conduct accuracy audits every quarter and after every deviation. Accuracy audits include comparison of pressure drop gauge values to calibrated pressure measurement devices or to pressure simulation using calibrated pressure sources; (12) Perform monthly leak checks on pressure connections. A pressure of at least 1.0 inches of water column to the connection must yield a stable sensor result for at least 15 seconds; and (13) Perform a visual inspection of the pressure drop gauge at least monthly if there is no redundant pressure drop gauge. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]

SI Id	Sequence	Requirement
COMG 5	5	Coating Room Pressure Alarm: The Permittee shall install, operate, and maintain an alarm that triggers when the pressure drop set point is exceeded. The set point at which the alarm triggers shall be set such that the alarm sounds when the pressure drop limit established in this permit is not met. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
COMG 5	6	Coating Room Airflow Direction: The Permittee shall maintain airflow into the Coating Room enclosure at all times. If airflow into the enclosure is not maintained, coating operations in the Coating Room shall be shut down until airflow direction into the enclosure is restored and shall be reported as a deviation. The Permittee shall document and keep records of all deviations, including the date of malfunction, steps taken to restore airflow direction into the enclosure, and the date operation continued. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
COMG 5	7	Coating Room Negative Pressure Monitoring: The Permittee shall continuously monitor the pressure drop across the enclosure of each coating room established during the most-recent performance test following Method 204 of appendix M to 40 CFR Part 51. If it is discovered that negative pressure is not being maintained, either by inspection or the alarm is sounded, coating operations in the coating room shall be shut down until a negative pressure state is restored. Each violation of the pressure drop limit shall be reported as a deviation. The Permittee shall document and keep records of all deviations, including the date of malfunction, steps taken to restore the minimum negative pressure, and the date operation continued. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Minn. Stat. 116.385, subd. 3]
COMG 5	8	Weekly Reporting: The Permittee shall submit a weekly report due by 4:30pm on Friday each week that includes pressure drop readings, the door status, and daily alarm verification for each coating room in COMG 5. The report shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). The report shall be submitted to AQRoutineReport@pca.state.mn.us and must include any deviation from the approved minimum pressure drop, and/or door status, the actions taken to evaluate the reasons for the deviation, and the corrective actions taken to resolve the deviations. [Minn. R. 7007.0500, subp. 3, Minn. R. 7007.0800, subp. 2(A) & (B)]
COMG 5	9	The Permittee shall install and maintain a Retro-Coat Vapor Intrusion System on the floor surfaces of each coating room in COMG 5 where t-DCE VOC coaters operate. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. Stat. 116.385, subd. 3]
COMG 5	10	The Permittee shall conduct a performance test due within 30 days of permit issuance and every 12 months thereafter to determine if each coating room in COMG 5 is a permanent total enclosure that meets the criteria of Method 204 of appendix M to 40 CFR pt. 51. The first test is due by the date specified above and all subsequent tests shall be completed every 12 months thereafter by the due date (month and day) and as described below. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Method 204, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a Notice of Compliance letter. Testing conducted more than 60 days prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
COMG 5	11	Daily Inspection: On each day of operation, the Permittee shall inspect the floor of each coating room where t-DCE VOC coaters operate to check for degradation of the Retro-Coat Vapor Intrusion Coating System and do the following (where applicable): 1) If degradation is discovered, the Permittee shall immediately resolve the degradation. 2) If the degradation is not resolved within 24 hours, the Permittee shall immediately cease VOC-coating operations in that coating room until the degradation is corrected. 3) Notify the MPCA immediately upon ceasing VOC coating operations due to degradation on the Retro-Coat Vapor Intrusion System. 4) Photographs of all degradation areas shall be taken before and after corrective actions are taken. Photographs shall be retained in Facility records. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. Stat. 116.385, subd. 3]
COMG 5	12	The Permittee shall submit a report due monthly by the 15th of every month. The report shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). The report shall be submitted to AQRoutineReport@pca.state.mn.us and must contain the following: 1) Floor degradation discovered in the past month; and 2) Description of all corrective actions. [Minn. R. 7007.0500, subp. 3, Minn. R. 7007.0800, subp. 2(A) & (B)]
COMG 5	13	Daily Inspection: On each day of operation, the Permittee shall inspect the and record the door status and verify the alarm system is operating with a set point at a minimum pressure drop of 0.007 inches of water for each coating room. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
COMG 6	3570	Filterable Particulate Matter <= 0.40 pounds per million Btu heat input. The potential to emit from the unit is 0.0076 lb/MMBtu due to equipment design and allowable fuels. This limit applies individually to each unit in COMG 6. [Minn. R. 7011.0515, subp. 1]
COMG 6	3580	Opacity <= 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. [Minn. R. 7011.0515, subp. 2]
COMG 6	3632	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
COMG 6	3637	The Permittee shall keep records of fuel purchases showing fuel types. for the purpose of reporting emissions to the annual emission inventory. [Minn. R. 7007.0800, subp. 5, Minn. R. 7019.3000-7019.3100]
COMG 7	3680	Particulate Matter <= 0.30 grains per dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. This limit applies individually to each unit in COMG 7. [Minn. R. 7011.0715, subp. 1(A)]
COMG 7	3690	Opacity <= 20 percent opacity. This limit applies individually to each unit in COMG 7. [Minn. R. 7011.0715, subp. 1(B)]
COMG 8	1	The Permittee shall install, operate and maintain each water-based spray battery terminal post coater subject to COMG 8 requirements inside a coating room meeting the requirements of COMG 5. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 8	2	The Permittee shall vent emissions from each water-based spray battery terminal post coater subject to COMG 8 requirements to control equipment meeting the requirements of COMG 14 whenever each water-based spray battery terminal post coater operates. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 8	3	Water-based Spray Battery Terminal Post Coater operated at the facility is subject to the requirements in COMG 1. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 8	4	The Permittee is prohibited from using any coating that contains any hazardous air pollutant (HAP), including the target HAPs as defined under 40 CFR Section 63.11180. [Minn. R. 7007.0800, subp. 2(A)]
COMG 8	3180	Daily Recordkeeping. On each day of operation, the Permittee shall calculate, record, and maintain a record of the total quantity of each coating and other solids-containing material, including the solids content of each coating (as a mass fraction), used by each coater in COMG 8. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
COMG 8	3190	Particulate Matter: Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate, record, and maintain a record of the following for the previous operating day using the daily usage records: 1) Total weight of water-based coating used by each unit in COMG 8, in pounds/day; and 2) Daily average hourly emissions of PM10 and PM2.5 from all water-based coaters in COMG 8 as determined elsewhere in this permit, in pounds/hour. This record shall also include solids contents of each material as determined by the Material Content requirement of this permit. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 8	3855	PM < 10 micron: Daily Calculations. The Permittee shall calculate PM10 emissions from COMG 8 using the following equations: PM10WB = TPM10WB/24 TPM10WB = [(IWB1 x JWB1) + (IWB2 x JWB2) + (IWB3 x JWB3)] x (1-TE) x (1-CE1) where: PM10WB = daily average PM10 emissions from COMG 8, in pounds/hour; TPM10WB = total daily PM10 emissions from each EQUI in COMG 8, in pounds/day; IWB# = total weight of coating used in COMG 8 based on daily usage logs, in pounds/day; JWB# = solids content of coating used in IWB#, in weight percent; TE = minimum transfer efficiency allowed by the permit as of permit issuance (65 percent). Other transfer efficiencies allowed by this permit shall be based on MPCA-approved stack test results according to approved replicable methodology (ARM) requirements; and CE1 = minimum PM10 control efficiency required by COMG 14, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
COMG 8	3860	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate PM2.5 emissions from COMG 8 using the following equations: PM2.5WB = TPM2.5WB/24 TPM2.5WB = [(IWB1 x JWB1) + (IWB2 x JWB2) + (IWB3 x JWB3)] x (1-TE) x (1-CE2) where: PM2.5WB = daily average PM2.5 emissions from COMG 8, in pounds/hour; TPM2.5WB = total daily PM2.5 emissions from each EQUI in COMG 8, in pounds/day; IWB# = total weight of coating used in COMG 8 based on daily usage logs, in pounds/day; JWB# = solids content of coating used in IWB#, in weight percent; TE = minimum transfer efficiency allowed by the permit as of permit issuance (65 percent). Other transfer efficiencies allowed by this permit shall be based on MPCA-approved stack test results according to approved replicable methodology (ARM) requirements; and CE2 = minimum PM2.5 control efficiency required by COMG 14, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
COMG 8	3980	Material Content. Solids (PM, PM<10 microns, and PM<2.5 microns) contents in coatings and other materials used in COMG 8 shall be determined by the Safety Data Sheet (SDS) or the Material Safety Data Sheet (MSDS) provided by the supplier for each material used. If a material content range is given on the SDS or the MSDS, the highest number in the range shall be used in all compliance calculations. If there is information provided in the Regulatory Section of the SDS, the highest number in the range of that section may be used. Other alternative methods approved by the MPCA may be used to determine the solids content. The Commissioner reserves the right to require the Permittee to determine the solids content of any material, according to EPA or ASTM reference methods. If an EPA or ASTM reference method is used for material content determination, the data obtained shall supersede the SDS or the MSDS. [Minn. R. 7007.0800, subp. 4-5]

SI Id	Sequence	Requirement
COMG 8	4010	Maximum Contents of Materials and Process Rate: The Permittee assumed certain worst-case contents of materials and process rates when determining the short-term potential to emit of units in COMG 8. These assumptions are listed in Appendix B of this permit. Increasing the process rate or changing to a material that has a higher content of any of the given pollutants, or an addition of a pollutant not listed in Appendix B, is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150. [Minn. R. 7005.0100, subp. 35a]
COMG 8	19821	Transfer efficiency for PM < 10 micron: Protocol for Re-Setting the Transfer efficiency Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission rates in pound PM10 per hour and transfer efficiency in pound PM10 per pound of solids (as applied) as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per hour and pound of coating solids as applied in the performance test report required by Minn. R. 7017.2035, subp. 1. The transfer efficiency for PM < 10 micron used for calculating emissions shall be re-set to the 3-hour average transfer efficiency in pound PM10 per pound of coating solids as applied, measured during the most recent MPCA-approved emission factor performance test. The new transfer efficiency for PM < 10 micron: used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 8	19822	Transfer efficiency for PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Transfer efficiency for PM < 10 micron Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
COMG 8	19823	Transfer efficiency for PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
COMG 8	19824	Transfer efficiency for PM < 2.5 micron: Protocol for Re-Setting the Transfer efficiency Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission rates in pound PM2.5 per hour and transfer efficiency in pound PM2.5 per pound of solids (as applied) as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per hour and pound of coating solids as applied in the performance test report required by Minn. R. 7017.2035, subp. 1. The transfer efficiency for PM < 2.5 micron used for calculating emissions shall be re-set to the 3-hour average transfer efficiency in pound PM2.5 per pound of coating solids as applied, measured during the most recent MPCA-approved emission factor performance test. The new transfer efficiency for PM < 2.5 micron: used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 8	19825	Transfer efficiency for PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Transfer efficiency for PM < 2.5 micron Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]

SI Id	Sequence	Requirement
COMG 8	19826	Transfer efficiency for PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
COMG 9	1	The Permittee shall vent emissions from EQUI 167 to a stack/vent meeting the requirements of STRU 41 whenever EQUI 167 operates. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 9	5	The Permittee shall operate and maintain a Sub-Slab Depressurization and Solvent Vapor Extraction system (EQUI 167), and vent emissions to two 2,000-pound granulated activated carbon (GAC) canisters connected in-series (TREA 50 and TREA 51) such that all solvent vapor emissions from beneath the facility floor are captured and vented through the remediation stack (STRU 41) following the requirements of this permit. The requirement to vent emissions from EQUI 167 to TREA 50 and 51 terminates when the MPCA Remediation Division approves the removal of TREA 50 and TREA 51 in writing. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
COMG 9	6	Sampling Locations: The Permittee shall install and maintain gas sampling ports at the following locations required by the MPCA Remediation Division. This includes but is not limited to sampling ports at the inlet side, in between and at the effluent side of the two carbon canisters controlling emissions from EQUI 167. The requirement to install and maintain gas sampling ports at these locations terminates when the MPCA Remediation Division approves the removal of TREA 50 and TREA 51 in writing. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
COMG 9	7	The Permittee shall obtain a gas sample from the Solvent Vapor Extraction system at the locations and with the frequency required by the MPCA Remediation Division. If sampling is required, the Permittee shall send each sample to a third-party analytical laboratory for analysis following EPA Method TO-15. The requirement to conduct quarterly sampling of emissions from Solvent Vapor Extraction system terminates when the MPCA Remediation Division approves the removal of TREA 50 and TREA 51 in writing. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
COMG 9	8	Sample Analytical Results Recordkeeping: If sampling and analysis is required by the MPCA Remediation Division, the Permittee shall maintain a record of the analytical test results on each required gas sample, including the date of the test and the concentration of emissions from each VOC species measured by EPA Method TO-15. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]

SI Id	Sequence	Requirement
COMG 9	10	1,2-(trans-) Dichloroethylene: Emissions Calculations: If required by the MPCA, the Permittee shall calculate and record emission rates of 1,2-(trans-) Dichloroethylene and of all the other chemicals analyzed by EPA Method TO-15, in pounds per day, using the following equation: SVR = BTi x Vrem Where: SVR = daily emissions of 1,2-(trans-) Dichloroethylene (or other chemicals analyzed by EPA Method TO-15), in pound/day; BTi = concentration of 1,2-(trans-) Dichloroethylene (or other chemicals analyzed by EPA Method TO-15) measured for the last required sample, in pounds/actual cubic foot; and Vrem = exhaust flow rate from the solvent vapor remediation stack, in standard cubic feet/day. As of permit issuance, the exhaust flow rate at the remediation stack is 695 standard cubic feet per minute (1,000,800 standard cubic feet per day). Other standard exhaust flow rates from the solvent vapor remediation stack allowed by this permit shall be based on MPCA-approved test results according to approved replicable methodology (ARM) requirements. Any subsequent standard exhaust flow rate from the solvent vapor remediation stack must be measured concurrently with the measurement of 1,2-(trans-) Dichloroethylene concentration. Records of the BTi value obtained for any given sample shall be made available as required by MPCA. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
COMG 9	11	The Permittee shall operate and maintain the sub-slab depressurization and solvent vapor extraction system, and carbon canisters in COMG 9 in accordance with the Operation and Maintenance (O & M) Plan approved by the MPCA Remediation Division. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. The requirement to maintain TREA 50 and 51 terminates when the MPCA Remediation Division approves the removal of TREA 50 and TREA 51 in writing. [Minn. R. 7007.0800, subp. 14, Minn. Stat. 116.07, subd. 9(2)]
COMG 9	12	Carbon Canister Replacement: After 300 days of continuous service, or sooner if the manufacturer recommends replacement before 300 days of continuous service, the Permittee shall perform the following procedure: 1) Replace the lead carbon canister (first in-series) with a fresh carbon canister; 2) Move the lag carbon canister (second in-series) to the lead position; and 3) Install the new carbon canister as the lag carbon canister (second in-series). The Permittee shall keep records of the date of each canister change. The requirement for carbon canister replacement terminates when the MPCA Remediation Division approves the removal of TREA 50 and TREA 51 in writing. [Minn. R. 7007.0800, subp. 2(A), Minn. Stat. 116.07, subd. 9(2)]
COMG 9	13	Carbon Canister Removal. The Permittee is authorized to remove carbon canister control equipment (TREA 50 and TREA 51) upon written approval from the MPCA Remediation Division without obtaining a major permit amendment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a) & 9(2)]
COMG 9	14	Routine Inspections: The Permittee shall verify operation of the sub-slab vapor remediation system and visually inspect the condition of each carbon canister in COMG 9 with respect to alignment, saturation, and any other condition that may affect the filter's performance with the frequency required by MPCA Remediation Division. The Permittee shall maintain a daily written record of system and filter inspections. The requirement for routine inspections of carbon canisters terminates when the MPCA Remediation Division approves the removal of TREA 50 and TREA 51 in writing. [Minn. R. 7007.0800, subp. 2(A), Minn. Stat. 116.07, subd. 9(2)]
COMG 9	15	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the Solvent Vapor Extraction system and control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4-5, Minn. Stat. 116.07, subd. 9(2)]

SI Id	Sequence	Requirement
COMG 9	16	Corrective Actions: If the sub-slab depressurization and solvent vapor extraction system, carbon canister or any of their components in COMG 9 are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the sub-slab depressurization and solvent vapor extraction system and carbon canisters. The Permittee shall keep a record of the type and date of any corrective action taken. The requirement for corrective actions on carbon canisters terminates when the MPCA Remediation Division approves the removal of TREA 50 and TREA 51 in writing. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5, Minn. Stat. 116.07, subd. 9(2)]
COMG 9	17	Protocol for Resetting the Standard Exhaust Flow Rate from the Solvent Vapor Remediation Stack: The Permittee may conduct performance testing to measure the standard exhaust flow rate and temperature from the solvent vapor remediation stack as allowed elsewhere in this permit. If the established standard exhaust flow rate from the solvent vapor remediation stack is to be reset, the reset shall be based on the standard exhaust flow rate from the solvent vapor remediation stack values recorded during the most recent MPCA-approved performance test where compliance with applicable emission limits was demonstrated. The established standard exhaust flow rate from the solvent vapor remediation stack shall be reset as follows: - if the highest standard exhaust flow rate recorded during the test are higher than the respective established standard exhaust flow rate, it shall be reset to the highest standard exhaust flow rate resulting from the test; or - if the highest standard exhaust flow rate recorded during the test are lower than the respective established emission factor, it shall be reset to the highest standard exhaust flow rate resulting from the test. The new standard exhaust flow rate shall be effective upon receipt of the Notice of Compliance letter that approves the test results and shall be incorporated into the permit when the permit is next amended. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 9	18	The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting Standard Exhaust Flow Rate allowed by this permit. [Minn. R. 7007.1500, subp. 1]
COMG 9	19	Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the Notice of Compliance letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
COMG 9	20	The Permittee shall operate EQUI 167 meeting the requirements of COMG 1. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 10	1	The Permittee shall limit emissions of PM < 10 micron <= 0.07966 pounds per hour 3-hour average. This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 10	3	The Permittee shall limit emissions of PM < 2.5 micron <= 0.07966 pounds per hour 3-hour average. This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 10	4	The Permittee shall limit emissions of Nitrogen Oxides <= 1.0482 pounds per hour 3-hour average. This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
COMG 10	5	The Permittee shall limit emissions of Lead <= 0.000005 pounds per hour 3-hour average. This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 10	6	The Permittee shall limit total maximum Heat Input <= 10.69 million Btu per hour. This limit applies to the combined heat input of all the space heating units in COMG 10 located in the North Building (STRU 38). If the Permittee replaces any existing direct heating equipment, adds new direct heating equipment, or modifies the existing equipment, such equipment is subject to this permit limit as well as all of the requirements in COMG 10. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. The Permittee is not required to complete emissions calculations described in Minn. R. 7007.1200, subp. 2. A permit amendment will still be needed regardless of the emissions increase if the change will be subject to a new applicable requirement or requires revisions to the limits or monitoring and recordkeeping in this permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 10	7	The Permittee shall keep an inventory of combustion units operating in the North Building (STRU 38), including manufacturer, model number, maximum-rated heat input capacity, in million British Thermal Units per hour, and location of the combustion unit. These records shall be kept up-to-date and available for inspection. [Minn. R. 7007.0800, subp. 5]
COMG 10	8	The Permittee shall not operate the space heating equipment during the months of June, July and August. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 10	9	Daily Recordkeeping. On each day of operation, the Permittee shall record the space heaters operating in the North Building (STRU 38). [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 11	1	The Permittee shall operate and maintain in-series control equipment train such that it achieves an overall control efficiency for Particulate Matter >= 97.0 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 11	2	The Permittee shall operate and maintain in-series control equipment train such that it achieves an overall control efficiency for PM < 10 micron >= 97.0 percent control efficiency. [Minn. R. 7007.0080, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 11	3	The Permittee shall operate and maintain in-series control equipment train such that it achieves an overall control efficiency for PM < 2.5 micron >= 97.0 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 11	4	The Permittee shall operate and maintain in-series control equipment train such that it achieves an overall control efficiency for Lead >= 86.0 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 11	5	The Permittee shall vent emissions from EQUIs 101, 102, 103, 104, and 221 to an in-series control equipment train meeting the permit requirements under COMG 11. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
COMG 11	6	If the Permittee replaces any control equipment unit subject to the requirements in COMG 11, the replacement in-series control equipment train must meet or exceed the control efficiency requirements for COMG 11 as well as comply with all other requirements of COMG 11. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 11	7	The Permittee shall operate and maintain each control equipment train in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
COMG 11	8	Daily Inspections: Once each operating day, the Permittee shall visually inspect the condition of each control equipment train with respect to any other condition that may affect the control equipment train's performance. The Permittee shall maintain a daily written record of these inspections. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, sub. 4a(a)]
COMG 11	9	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment train components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4 & 5]
COMG 11	10	Corrective Actions: If the control equipment train or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan. The Permittee shall keep a record of the type and date of any corrective action taken. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4 & 5]
COMG 11	11	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) for each Smog Hog in COMG 11 at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily. [Minn. R. 7007.0800, subps. 4-5]
COMG 11	12	Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of each Smog Hog at all times. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020 0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 11	13	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer of the smog hogs, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4-5]
COMG 11	14	Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the Smog Hog On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]
COMG 11	15	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the Smog Hog components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
COMG 11	16	Pre-Filter and Cell Maintenance for Smog Hogs: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher wastewater, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]
COMG 11	17	Corrective Actions for smog hogs: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range; or - the Smog Hog or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O&M Plan for the Smog Hog. The Permittee shall keep a record of the type and date of any corrective action taken for the Smog Hog. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4-5]
COMG 12	1	The Permittee shall operate and maintain in-series control equipment train such that it achieves an overall control efficiency for Particulate Matter >= 86.6 percent control efficiency. [Minn. R. 7007.0800, subp. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 12	2	The Permittee shall operate and maintain in-series control equipment train such that it achieves an overall control efficiency for PM < 10 micron >= 86.6 percent control efficiency. [Minn. R. 7007.0800, subp. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 12	3	The Permittee shall operate and maintain in-series control equipment train such that it achieves an overall control efficiency for PM < 2.5 micron >= 86.6 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 12	4	The Permittee shall vent emissions from EQUIs 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 146, 147, 149, 150, 152, 153, 154, 155, 156, 157, and 158 to an in-series control equipment train meeting the permit requirements under COMG 12. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 12	5	If the Permittee replaces any control equipment unit subject to the requirements of COMG 12, the replacement in-series control equipment train must meet or exceed the control efficiency requirements for COMG 12 as well as comply with all other requirements of COMG 12. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 12	6	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment train components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4 & 5]
COMG 12	7	The Permittee shall operate and maintain each control equipment train in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
COMG 12	8	Daily Inspections: Once each operating day, the Permittee shall visually inspect the condition of each control equipment train with respect to any other condition that may affect the control equipment train's performance. The Permittee shall maintain a daily written record of these inspections. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
COMG 12	9	Corrective Actions: If the control equipment train or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan. The Permittee shall keep a record of the type and date of any corrective action taken. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4 & 5]
COMG 12	11	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) for each Smog Hog in COMG 11 at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily. [Minn. R. 7007.0800, subps. 4-5]
COMG 12	12	Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of each Smog Hog at all times. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020 0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 12	13	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer of the smog hogs, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4-5]
COMG 12	14	Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the Smog Hog On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]
COMG 12	15	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the Smog Hog components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4-5]
COMG 12	16	Pre-Filter and Cell Maintenance for Smog Hogs: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher wastewater, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]
COMG 12	17	Corrective Actions for smog hogs: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range; or - the Smog Hog or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O&M Plan for the Smog Hog. The Permittee shall keep a record of the type and date of any corrective action taken for the Smog Hog. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subps. 4-5]
COMG 13	3450	The Permittee shall limit Particulate Matter <= 0.30 grains per dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. This limit applies to each individual unit in COMG 13. [Minn. R. 7011.0610, subp. 1(A)(1)]
COMG 13	3460	The Permittee shall limit Opacity <= 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. This limit applies to each individual unit in COMG 13. [Minn. R. 7011.0610, subp. 1(A)(2)]
COMG 13	3512	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
COMG 13	3517	The Permittee shall keep records of fuel purchases showing fuel types. [Minn. R. 7007.0800, subp. 5]

SI Id	Sequence	Requirement
COMG 14	1	The Permittee shall operate and maintain each piece of control equipment in this group such that it achieves a control efficiency for Particulate Matter >= 99.0 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 14	2	The Permittee shall operate and maintain each piece of control equipment in this group such that it achieves a control efficiency for PM < 10 micron >= 99.0 percent control efficiency. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 14	3	The Permittee shall operate and maintain each piece of control equipment in this group such that it achieves a control efficiency for PM < 2.5 micron >= 99.0 percent control efficiency. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 14	4	The Permittee shall operate and maintain the HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
COMG 14	5	If the Permittee replaces any HEPA filter subject to COMG 14 requirements, the replacement control must meet or exceed the control efficiency requirements of COMG 14 as well as comply with all other requirements of COMG 14. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 14	6	Daily Inspections: Once each operating day, the Permittee shall visually inspect the condition of each HEPA filter with respect to alignment, saturation, tears, holes and any other condition that may affect the filter's performance. The Permittee shall maintain a daily written record of filter inspections. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 14	7	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
COMG 14	8	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
COMG 15	1	The Permittee shall limit emissions of PM < 10 micron <= 0.0171 pounds per hour 3-hour average. This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 15	3	The Permittee shall limit emissions of PM < 2.5 micron <= 0.0171 pounds per hour 3-hour average. This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 15	4	The Permittee shall limit emissions of Nitrogen Oxides <= 0.2248 pounds per hour 3-hour average. This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 15	5	The Permittee shall limit emissions of Lead <= 0.000001 pounds per hour 3-hour average. This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]

Commented [A75]: See comment above at TREA 55-59. The COMG 14 HEPA filters will be Nederman units. The manufacturer does not recommend opening the units on a daily or quarterly basis; instead the pressure gauges shall be checked once each operating day to determine when the filters require maintenance.

Commented [A76]: Same comment as above.

SI Id	Sequence	Requirement
COMG 15	6	The Permittee shall limit total maximum Heat Input <= 2.29 million Btu per hour. This limit applies to the combined heat input of all space heating units in COMG 15 located in the South Building (STRU 42). If the Permittee replaces any existing direct heating equipment, adds new direct heating equipment, or modifies the existing equipment, such equipment is subject to this permit limit as well as all of the requirements in COMG 15. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. The Permittee is not required to complete emissions calculations described in Minn. R. 7007.1200, subp. 2. A permit amendment will still be needed regardless of the emissions increase if the change will be subject to a new applicable requirement or requires revisions to the limits or monitoring and recordkeeping in this permit. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 15	7	The Permittee shall keep an inventory of combustion units in the South Building (STRU 42), including manufacturer, model number, maximum-rated heat input capacity, in million British Thermal Units per hour, and location of the combustion unit. The Permittee shall update the list to include any replaced, modified, or new equipment prior to making the change. The list shall correlate the units to the Subject Item numbers used in this permit and shall include the data on GI-04, GI-05B, GI-05C, and GI-05F. The date of construction shall be the date the change was made for replaced, modified, or new equipment. The list shall correlate the units to the Subject Item numbers used in this permit and shall include the data on GI-04, GI-05B, GI-05C, and GI-05F. The date of construction shall be the date the change was made for replaced, modified, or new equipment. [Minn. R. 7007.0800, subp. 2(A)]
COMG 15	8	The Permittee shall not operate the space heating equipment during the months of June, July and August. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 15	9	Daily Recordkeeping. On each day of operation, the Permittee shall record the space heaters operating in the South Building (STRU 42). [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 16	1	The Permittee shall limit Process Throughput <= 39,355.50 tons per year 365-day rolling sum. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 16	2	The Permittee shall limit captured and controlled emissions of Lead <= 48.21 pounds per year 365-day rolling sum to be calculated each operating day for the previous 365-day period as described later in this permit. This limit applies to captured and controlled lead emissions from all EQUIs in COMG 16. The captured and controlled emissions from each EQUI in COMG 16 are the stack lead emissions calculated at each corresponding EQUI stack by using the controlled lead emission factor listed in Appendix D. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 16	3	The Permittee shall limit uncaptured emissions of Lead <= 8.46 pounds per year 365-day rolling sum to be calculated each operating day for the previous 365-day period as described later in this permit. This limit applies to uncaptured lead emissions from all EQUIs in COMG 16. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 16	4	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by all EQUIs in COMG 16. This shall be based on written usage logs; and 2) total process throughput from all EQUIs in COMG 16 for the previous 365-day period by calculating the total process throughput for the previous 365 days. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
COMG 16	5	Lead: Captured and Controlled Emissions: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) total captured and controlled lead emissions from all EQUIs in COMG 16 for the previous operating day. The captured and controlled emissions for each EQUI in COMG 16 must be calculated using formulas specified in this permit; and 2) 365-day rolling sum annual captured and controlled lead emissions emitted through each STRU to which from each EQUI in COMG 16 vents for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 16	6	Lead: Uncaptured Emissions: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) total uncaptured lead emissions from all EQUIs in COMG 16 for the previous operating day. The uncontrolled emissions for each EQUI in COMG 16 must be calculated using formulas specified in this permit, and 2) 365-day rolling sum annual uncaptured lead emissions emitted through each STRU to which from each EQUI in COMG 16 vents for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
COMG 16	7	Captured and Controlled Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from COMG 16 using the following equations: COMG16CL = STRU15L365S + STRU16L365S + STRU17L365S + STRU74L365S + STRU20L365S + STRU75L365S + STRU23L365S + STRU24L365S + STRU25L365S + STRU26L365S + STRU30L365S + STRU31L365S + STRU32L365S + STRU33L365S = STRU34L365S + STRU35L365S where: COMG16CL = 365-day rolling sum captured and controlled lead emissions emitted from all EQUIs in COMG 16 for the previous 365-day period, in pounds/year; and STRU#L365S = 365-day rolling sum captured and controlled lead emissions emitted through the STRU# to which each EQUI in COMG 16 vents for the previous 365-day period, in pounds/year. [Minn. R. 7007.0800, subps. 4-5]
COMG 16	8	Uncaptured Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual uncaptured lead emissions from COMG 16 using the following equations: COMG16UL = STRU43L365S + STRU44L365S + STRU45L365S + STRU46L365S + STRU47L365S + STRU48L365S + STRU49L365S + STRU50L365S + STRU51L365S + STRU52L365S + STRU53L365S + STRU56L365S where: COMG16UL = 365-day rolling sum uncaptured lead emissions emitted from all EQUIs in COMG 16 for the previous 365-day period, in pounds/year; and STRU#L365S = 365-day rolling sum uncaptured lead emissions emitted through the STRU# to which each EQUI in COMG 16 vents for the previous 365-day period, in pounds/year. [Minn. R. 7007.0800, subps. 4-5]
EQUI 82	4060	At the time of permit issuance, EQUI 82 is a UV spray coater as described in Appendix B of this permit and shall comply with the requirements under COMG 1 and COMG 5. EQUI 82 shall comply with the requirements under COMG 2 except for the condition to operate with control equipment meeting the requirements in COMG 14. EQUI 82 may be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subp. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 84	2	At the time of permit issuance, EQUI 84 is a UV spray coater as described in Appendix B of this permit and shall comply with the requirements under COMG 1, COMG 2, and COMG 5. EQUI 84 may be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]

SI Id	Sequence	Requirement
EQUI 84	3	The Permittee shall vent emissions from EQUI 84 to control equipment meeting the requirements of TREA 55 whenever EQUI 84 operates. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 85	2	At the time of permit issuance, EQUI 85 is a water-based drip coater as described in Appendix B of this permit and it exhausts emissions through STRU 73. EQUI 85 shall comply with the requirements under COMG 1 and COMG 5. Compliance with COMG 5 is required for as long as EQUI 85 exhausts emissions through STRU 73. EQUI 85 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 87	2	At the time of permit issuance, EQUI 87 is a VOC dip coater as described in Appendix B of this permit and shall comply with the requirements under COMG 1 and COMG 5. EQUI 87 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 88	2	At the time of permit issuance, EQUI 88 is a VOC or water-based drip/spray coater as described in Appendix B of this permit and shall comply with requirements under COMG 1, COMG 4 when operating with VOC coatings. EQUI 88 shall comply with requirements under COMG 1, COMG 5, and COMG 8 when operating with water-based coating. EQUI 88 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 88	3	The Permittee shall vent emissions from EQUI 88 to control equipment meeting the requirements of TREA 56 whenever EQUI 88 operates. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 89	2	At the time of permit issuance, EQUI 89 is a water-based dip coater as described in Appendix B of this permit and it exhausts emissions through STRU 73. EQUI 89 shall comply with requirements under COMG 1 and COMG 5. Compliance with COMG 5 is required for as long as EQUI 89 exhausts emissions through STRU 73. EQUI 89 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 92	2	At the time of permit issuance, EQUI 92 is a water-based dip coater as described in Appendix B of this permit and it exhausts emissions through STRU 73. EQUI 92 shall comply with requirements under COMG 1 and COMG 5. Compliance with COMG 5 is required for as long as EQUI 92 exhausts emissions through STRU 73. EQUI 92 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
EQUI 93	2	At the time of permit issuance, EQUI 93 is a VOC or water-based dip coater as described in Appendix B of this permit and shall comply with requirements under COMG 1 and COMG 5. EQUI 93 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 94	2	At the time of permit issuance, EQUI 94 is a VOC or water-based drip coater as described in Appendix B of this permit and shall comply with requirements under COMG 1 and COMG 5. EQUI 94 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R, 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
EQUI 95	2	At the time of permit issuance, EQUI 95 is a VOC or water-based spray coater as described in Appendix B of this permit. EQUI 95 shall comply with requirements under COMG 1, COMG 4 and COMG 5 when operating with VOC coating. EQUI 95 shall comply with requirements under COMG 1, COMG 5, and COMG 8 when operating with water-based coating. EQUI 95 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 95	3	The Permittee shall vent emissions from EQUI 95 to control equipment meeting the requirements of TREA 57 whenever EQUI 95 operates. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 97	2	At the time of permit issuance, EQUI 97 is a water-based dip coater as described in Appendix B of this permit and it exhausts emissions through STRU 73. EQUI 97 shall comply with requirements under COMG 1 and COMG 5. Compliance with COMG 5 is required for as long as EQUI 97 exhausts emissions through STRU 73. EQUI 97 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 98	2	At the time of permit issuance, EQUI 98 is a VOC or water-based drip coater as described in Appendix B of this permit and shall comply with requirements under COMG 1 and COMG 5. EQUI 98 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 99	2	At the time of permit issuance, EQUI 99 is a VOC or water-based dip coater as described in Appendix B of this permit and shall comply with requirements under COMG 1 and COMG 5. EQUI 99 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 100	2	At the time of permit issuance, EQUI 100 is a VOC or water-based drip coater as described in Appendix B of this permit and shall comply with requirements under COMG 1 and COMG 5. EQUI 100 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 101	3170	The Permittee must limit Process Throughput <= 2180.0 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 101	3180	Process Throughput: Daily Recordkeeping. On each day of operation, the Permittee shall calculate, record, and maintain a record of the total weight of each lead-containing material processed by EQUI 101. This shall be based on written usage logs. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 101	3190	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 101 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 101	3455	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 101 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 101	3460	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equation: EQUI101PM10 = [A x B x (1-CE1)] / 24 Where: EQUI101PM10 = daily average PM10 emissions from EQUI 101, in pounds/hour; A = total weight of lead-containing material processed by EQUI 101 for the previous operating day, in pounds/day; and B = uncontrolled PM10 emission factor for EQUI 101 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 11, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 101	3465	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equation: EQUI101PM2.5 = [A x C x (1-CE2)] / 24 Where: EQUI101PM2.5 = daily average PM2.5 emissions from EQUI 101, in pounds/hour; A = total weight of lead-containing material processed by EQUI 101 for the previous operating day, in pounds/day; and C = uncontrolled PM2.5 emission factor for EQUI 101 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 11, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 101	3470	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equation: EQUI101L = D x E x (1 – CE3) Where: EQUI101L = total lead emissions from EQUI 101, in pounds/day; D = total weight of lead-containing material processed by EQUI 101 for the previous operating day, in pounds/day; and E = uncontrolled lead emission factor for EQUI 101 listed in Appendix D, as a fraction; and CE3 = minimum overall lead control efficiency required by COMG 11, as a fraction. [Minn. R. 7007.0800, subps. 4 5]
EQUI 101	3475	The Permittee shall vent melt emissions from EQUI 101 to control equipment meeting the requirements of TREA 1 and TREA 60 operated in-series, and COMG 11 whenever EQUI 101 operates. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 101	3632	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
EQUI 101	6450	The Permittee shall vent melt emissions from EQUI 101 to a stack/vent meeting the requirements of STRU 1 whenever EQUI 101 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 101	19650	The Permittee shall vent combustion emissions from EQUI 101 to a stack/vent meeting the requirements of STRU 68 whenever EQUI 101 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 101	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 101	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 101	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 101	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 101	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 101	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 101	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 101	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 101	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 102	3455	The Permittee must limit Process Throughput <= 1000.0 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 102	3460	Process Throughput: Daily Recordkeeping. On each day of operation, the Permittee shall calculate, record, and maintain a record of the total weight of each lead-containing material processed by EQUI 102. This shall be based on written usage logs. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 102	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 102 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 102	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 102 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 102	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equation: EQUI102PM10 = [A x B x (1-CE1)] / 24 Where: EQUI102PM10 = daily average PM10 emissions from EQUI 102, in pounds/hour; A = total weight of lead-containing material processed by EQUI 102 for the previous operating day, in pounds/day; and B = uncontrolled PM10 emission factor for EQUI 102 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 11, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 102	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equation: EQUI102PM2.5 = [A x C x (1-CE2)] / 24 Where: EQUI102PM2.5 = daily average PM2.5 emissions from EQUI 102, in pounds/hour; A = total weight of lead-containing material processed by EQUI 102 for the previous operating day, in pounds/day; and C = uncontrolled PM2.5 emission factor for EQUI 102 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 11, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 102	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equation: EQUI102L = D x E x (1 – CE3) Where: EQUI102L = total lead emissions from EQUI 102, in pounds/day; D = total weight of lead-containing material processed by EQUI 102 for the previous operating day, in pounds/day; E = uncontrolled lead emission factor for EQUI 102 listed in Appendix D, as a fraction; and CE3 = minimum overall lead control efficiency required by COMG 11, as a fraction. [Minn. R. 7007.0800, subps. 4 5]
EQUI 102	3632	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
EQUI 102	6430	The Permittee shall vent melt emissions from EQUI 102 to control equipment meeting the requirements of TREA 1 and TREA 60 operated in-series, and COMG 11 whenever EQUI 102 operates. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 102	6450	The Permittee shall vent melt emissions from EQUI 102 to a stack/vent meeting the requirements of STRU 1 whenever EQUI 102 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 102	19650	The Permittee shall vent combustion emissions from EQUI 102 to a stack/vent meeting the requirements of STRU 68 whenever EQUI 102 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 102	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 102	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 102	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 102	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 102	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 102	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 102	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 102	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 102	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 102	19669	The Permittee shall not operate EQUI 102 and EQUI 103 simultaneously. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 103	3455	The Permittee must limit Process Throughput <= 240.0 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 103	3460	Process Throughput: Daily Recordkeeping. On each day of operation, the Permittee shall calculate, record, and maintain a record of the total weight of each lead-containing material processed by EQUI 103. This shall be based on written usage logs. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 103	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 103 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 103	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 103 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 103	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equation: EQUI103PM10 = [A x B x (1-CE1)] / 24 Where: EQUI103PM10 = daily average PM10 emissions from EQUI 103, in pounds/hour; A = total weight of lead-containing material processed by EQUI 103 for the previous operating day, in pounds/day; and B = uncontrolled PM10 emission factor for EQUI 103 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 11, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 103	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equation: EQUI103PM2.5 = [A x C x (1-CE2)] / 24 Where: EQUI103PM2.5 = daily average PM2.5 emissions from EQUI 103, in pounds/hour; A = total weight of lead-containing material processed by EQUI 103 for the previous operating day, in pounds/day; and C = uncontrolled PM2.5 emission factor for EQUI 103 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 11, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 103	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equation: EQUI103L = D x E x (1 – CE3) Where: EQUI103L = total lead emissions from EQUI 103, in pounds/day; D = total weight of lead-containing material processed by EQUI 103 for the previous operating day, in pounds/day; and E = uncontrolled lead emission factor for EQUI 103 listed in Appendix D, as a fraction; and CE3 = minimum overall lead control efficiency required by COMG 11, as a fraction. [Minn. R. 7007.0800, subps. 4 5]
EQUI 103	3632	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
EQUI 103	6430	The Permittee shall vent melt emissions from EQUI 103 to control equipment meeting the requirements of TREA 1 and TREA 60 operated in-series, and COMG 11 whenever EQUI 103 operates. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 103	6450	The Permittee shall vent melt emissions from EQUI 103 to a stack/vent meeting the requirements of STRU 1 whenever EQUI 103 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 103	19650	The Permittee shall vent combustion emissions from EQUI 103 to a stack/vent meeting the requirements of STRU 69 whenever EQUI 103 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 103	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 103	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 103	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 103	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 103	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 103	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 103	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 103	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 103	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 103	19669	The Permittee shall not operate EQUI 102 and EQUI 103 simultaneously. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 104	3455	The Permittee must limit Process Throughput <= 4000.0 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 104	3460	Process Throughput: Daily Recordkeeping. On each day of operation, the Permittee shall calculate, record, and maintain a record of the total weight of each lead-containing material processed by EQUI 104. This shall be based on written usage logs. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 104	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 104 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 104	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 104 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 104	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equation: EQUI104PM10 = [A x B x (1-CE1)] / 24 Where: EQUI104PM10 = daily average PM10 emissions from EQUI 104, in pounds/hour; A = total weight of lead-containing material processed by EQUI 104 for the previous operating day, in pounds/day; and B = uncontrolled PM10 emission factor for EQUI 104 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 11, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 104	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equation: EQUI104PM2.5 = [A x C x (1-CE2)] / 24 Where: EQUI104PM2.5 = daily average PM2.5 emissions from EQUI 104, in pounds/hour; A = total weight of lead-containing material processed by EQUI 104 for the previous operating day, in pounds/day; and C = uncontrolled PM2.5 emission factor for EQUI 104 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 11, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 104	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equation: EQUI104L = D x E x (1 – CE3) Where: EQUI104L = total lead emissions from EQUI 104, in pounds/day; D = total weight of lead-containing material processed by EQUI 104 for the previous operating day, in pounds/day; and E = uncontrolled lead emission factor for EQUI 104 listed in Appendix D, as a fraction; and CE3 = minimum overall lead control efficiency required by COMG 11, as a fraction. [Minn. R. 7007.0800, subps. 4 5]
EQUI 104	3632	Fuel type: Natural gas only, by design. [Minn. R. 7005.0100, subp. 35a]
EQUI 104	6430	The Permittee shall vent melt emissions from EQUI 104 to control equipment meeting the requirements of TREA 1 and TREA 60 operated in-series, and COMG 11 whenever EQUI 104 operates. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 104	6450	The Permittee shall vent melt emissions from EQUI 104 to a stack/vent meeting the requirements of STRU 1 whenever EQUI 104 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 104	19650	The Permittee shall vent combustion emissions from EQUI 104 to a stack/vent meeting the requirements of STRU 68 whenever EQUI 104 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 104	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 104	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 104	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 104	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 104	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 104	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 104	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 104	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 104	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 113	1	The Permittee is prohibited from increasing emissions of pollutants from EQUI 113 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. The Permittee shall vent emissions from EQUI 113 control equipment meeting the permit requirements of TREA 52. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 113	2	The Permittee shall vent emissions from EQUI 113 to a stack/vent meeting the requirements of STRU 57 whenever EQUI 113 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 114	1	The Permittee is prohibited from increasing emissions of pollutants from EQUI 114 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. The Permittee shall vent emissions from EQUI 114 control equipment meeting the permit requirements of TREA 53. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 114	2	The Permittee shall vent emissions from EQUI 114 to a stack/vent meeting the requirements of STRU 57 whenever EQUI 114 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 115	1	The Permittee is prohibited from increasing emissions of pollutants from EQUI 115 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. The Permittee shall vent emissions from EQUI 115 control equipment meeting the permit requirements of TREA 54. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 115	2	The Permittee shall vent emissions from EQUI 115 to a stack/vent meeting the requirements of STRUs 43 and 50 whenever EQUI 115 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 116	1	The Permittee shall vent emissions from EQUI 116 to a stack/vent meeting the requirements of STRU 50 whenever EQUI 116 operates. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 116	2	At the time of permit issuance, EQUI 116 is a water-based dip coater as described in Appendix B of this permit and shall comply with requirements under COMG 1. EQUI 116 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 116	3	The Permittee shall apply water-based coating from EQUI 116 using dip or drip application methods only unless it is modified as authorized elsewhere in this permit. Spray application of coating while venting emissions to STRU 50 is prohibited. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 117	1	The Permittee shall vent emissions from EQUI 117 to a stack/vent meeting the requirements of STRU 35 whenever EQUI 117 operates. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 117	2	At the time of permit issuance, EQUI 117 is a UV spray coater as described in Appendix B of this permit and shall comply with requirements under COMG 1. EQUI 117 shall comply with the requirements under COMG 2 except for having to comply with operating under the following conditions: 1) operate with control equipment meeting the requirements in COMG 14; and 2) operate in a coating room meeting the requirements of COMG 5. EQUI 117 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & (B) , Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 117	3	The Permittee is prohibited from using any coating that contains any hazardous air pollutant (HAP), including the target HAPs as defined under 40 CFR Section 63.11180. [Minn. R. 7007.0800, subps. 2(A)]
EQUI 117	4	Daily Recordkeeping. On each day of operation, the Permittee shall calculate, record, and maintain a record of the total quantity of each coating and other solids-containing material, including the solids content of each coating (as a mass fraction), used by EQUI 117 and the time of the day when EQUI 117 was in operation. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 117	3465	Particulate Matter: Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate, record, and maintain a record of the following for the previous operating day using the daily usage records: 1) Total weight of UV coating used by EQUI 117, in pounds/day; and 2) Daily average hourly emissions of PM10 and PM2.5 from EQUI 117 as determined elsewhere in this permit, in pounds/hour. This record shall also include solids contents of each material as determined by the Material Content requirement of this permit. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 117	3475	PM < 10 micron: The Permittee shall calculate PM10 emissions from EQUI 117 using the following equations: EQUI117PM10 = F x G where: EQUI117PM10 = daily average PM10 emissions from EQUI 117, in pounds/hour; F = total weight of coating used in EQUI 117 based on daily usage logs, in pounds/day; and G = uncontrolled PM10 emission factor, in pounds PM10 per pound of coating, listed in Appendix B, as a fraction. Other uncontrolled emission factors allowed by this permit shall be based on the most recent MPCA-approved stack test results performed according to approved replicable methodology (ARM) requirements. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 117	3480	PM < 2.5 micron: PM < 2.5 micron: Daily Calculations. The Permittee shall calculate PM2.5 emissions from EQUI 117 using the following equations: EQUI117PM2.5 = F x H where: EQUI117PM2.5 = daily average PM2.5 emissions from EQUI 117, in pounds/hour; F = total weight of coating used in EQUI 117 based on daily usage logs, in pounds/day; and G = uncontrolled PM2.5 emission factor, in pounds PM2.5 per pound of coating, listed in Appendix B, as a fraction. Other uncontrolled emission factors allowed by this permit shall be based on the most recent MPCA-approved stack test results performed according to approved replicable methodology (ARM) requirements. [Minn. R. 7007.0800, subps. 4-5]
EQUI 117	3481	Maximum Contents of Materials and Process Rate: The Permittee assumed certain worst-case contents of materials and process rates when determining the short term potential to emit of EQUI 117. These assumptions are listed in Appendix B of this permit. Increasing the process rate or changing to a material that has a higher content of any of the given pollutants, or an addition of a pollutant not listed in Appendix B, is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150. [Minn. R. 7005.0100, subps. 35a]
EQUI 117	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 117	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 117	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 117	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 117	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 117	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 117	19666	The Permittee must limit the daily operation of EQUI 117 to the period between 5 am and 11 pm. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 120	3475	The Permittee shall vent emissions from EQUI 120 to a stack/vent meeting the requirements of STRU 4 whenever EQUI 120 operates. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 120	3520	The Permittee must limit emissions of NMHC+NOx <= 4.7 grams per kilowatt-hour. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305]
EQUI 120	3535	The Permittee must limit emissions of Particulate Matter <= 0.40 grams per kilowatt-hour. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305]
EQUI 120	3540	The Permittee must limit emissions of Carbon Monoxide <= 5.0 grams per kilowatt-hour. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), Minn. R. 7011.2305]
EQUI 120	3550	The Permittee must limit emissions of Opacity <= 20 percent opacity during the acceleration mode. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305]
EQUI 120	3560	The Permittee must limit emissions of Opacity <= 15 percent opacity during the lugging mode. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305]
EQUI 120	3565	The Permittee must limit emissions of Opacity <= 50 percent opacity during the peaks in either the acceleration or lugging modes. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 63.6590(c), Minn. R. 7011.2305]
EQUI 120	3670	The Permittee must limit Sulfur Content of Fuel <= 15.0 parts per million and either a minimum cetane index of 40 or a maximum aromatic content of 35 percent by volume, as required by 40 CFR Section 80.510(b). [40 CFR 60.4207(b), 40 CFR 63.6590(c), Minn. R. 7011.2305]
EQUI 120	4550	Sulfur Dioxide <= 0.0015 pounds per million Btu heat input. The potential to emit from the unit is 0.00044 lb/MMBtu due to equipment design and allowable fuels. [Minn. R. 7011.2300, subp. 2(B)]
EQUI 120	4560	Opacity <= 20 percent opacity once operating temperatures have been attained. [Minn. R. 7011.2300, subp. 1]
EQUI 120	4561	The Permittee shall limit Non-Emergency Operating Hours <= 100 hours per year. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 120	4562	On each day of operation, the Permittee shall operate EQUI 120 between the hours of 1:00pm and 4:00pm for maintenance testing. [Minn. R. 7007.0800, subp. 2(A)]
EQUI 120	4580	The Permittee shall keep records of fuel type and usage on a monthly basis. [Minn. R. 7007.0800, subp. 5]

SI Id	Sequence	Requirement
EQUI 120	4590	Hours of Operation: The Permittee shall maintain documentation on site that the unit is an emergency generator by design that qualifies under the U.S. EPA memorandum entitled "Calculating Potential to Emit (PTE) for Emergency Generators" dated September 6, 1995, limiting operation to 500 hours per year. [Minn. R. 7007.0800, subps. 4-5]
EQUI 120	4600	Fuel type: No. 2 fuel oil/diesel fuel meeting the requirements of 40 CFR Section 1090.305 only by design. [40 CFR 60.4207(b), Minn. R. 7005.0100, subp. 35a]
EQUI 120	19505	Fuel Supplier Certification: The Permittee shall obtain and maintain a fuel supplier certification for each shipment of diesel fuel oil, certifying that the sulfur content does not exceed 0.0015 percent by weight. [Minn. R. 7007.0800, subps. 4-5]
EQUI 120	19530	The Permittee shall submit a notification of date construction began: Due 30 calendar days after Date of Construction Start (or reconstruction). The report shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). Submit the name and number of the Subject Item and the date construction began. The notification shall be submitted electronically on Form CS-02. [40 CFR 60.7(a)(1), Minn. R. 7007.0500, subp. 3, Minn. R. 7019.0100, subp. 1]
EQUI 120	28030	The Permittee shall submit a notification of the actual date of initial startup: Due 15 calendar days after Initial Startup Date. The report shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). The notification shall be submitted electronically on Form CS-02. [40 CFR 60.7(a)(3), Minn. R. 7007.0500, subp. 3, Minn. R. 7019.0100, subp. 1]
EQUI 120	28040	The Permittee shall submit a notification of anticipated date for conducting opacity observations: Due 30 calendar days before Opacity Observation Date. The report shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). [40 CFR 60.7(a)(6), Minn. R. 7007.0500, subp. 3, Minn. R. 7019.0100, subp. 1]
EQUI 120	28050	The Permittee shall submit notification of the date construction of replacement began: Due 60 calendar days before Date of Construction or Replacement (or as soon as practicable). The report shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). Submit the information specified in 40 CFR Section 60.15(d)(1) through (7). The notification shall be submitted electronically on Form CS-02. [40 CFR 60.15(d), Minn. R. 7007.0500, subp. 3, Minn. R. 7011.0050]
EQUI 120	28060	The Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. IIII as follows: 40 CFR 60.4200(a)(2)(i); 40 CFR 60.4200(c); 40 CFR 60.4202(a)(2); 40 CFR 60.4205(b); 40 CFR 60.4207(b); 40 CFR 60.4208(a); 40 CFR 60.4209(a); 40 CFR 60.4211(a); 40 CFR 60.4211(c); 40 CFR 60.4211(f); 40 CFR 60.4214(b); 40 CFR 60.4218; 40 CFR 60.4219; and 40 CFR pt. 60, subp. IIII, Table 8. A copy of 40 CFR pt. 60, subp. IIII is included in Appendix J. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than 3 years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 60, subp. IIII, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.2305]

SI Id	Sequence	Requirement
EQUI 120	28080	The Permittee must comply with all applicable requirements of 40 CFR pt. 60, subp. A as follows: 40 CFR 60.1(a); 40 CFR 60.1(b); 40 CFR 60.1(c); 40 CFR 60.2; 40 CFR 60.3; 40 CFR 60.4; 40 CFR 60.5(a); 40 CFR 60.5(b); 40 CFR 60.6(a); 40 CFR 60.6(b); 40 CFR 60.7(a)(1); 40 CFR 60.7(a)(3); 40 CFR 60.7(a)(4); 40 CFR 60.7(a)(5); 40 CFR 60.7(a)(6); 40 CFR 60.7(a)(7); 40 CFR 60.7(b); 40 CFR 60.7(c); 40 CFR 60.7(d); 40 CFR 60.8(a); 40 CFR 60.8(b); 40 CFR 60.8(c); 40 CFR 60.8(d); 40 CFR 60.8(e); 40 CFR 60.8(f); 40 CFR 60.8(g); 40 CFR 60.8(h); 40 CFR 60.8(i); 40 CFR 60.9; 40 CFR 60.11(a); 40 CFR 60.11(b); 40 CFR 60.11(c); 40 CFR 60.11(d); 40 CFR 60.11(e)(1); 40 CFR 60.11(e)(2); 40 CFR 60.11(e)(3); 40 CFR 60.11(e)(4); 40 CFR 60.11(e)(5); 40 CFR 60.11(e)(6); 40 CFR 60.11(e)(7); 40 CFR 60.11(e)(8); 40 CFR 60.11(f); 40 CFR 60.11(g); 40 CFR 60.12; 40 CFR 60.13(a); 40 CFR 60.13(b); 40 CFR 60.13(c); 40 CFR 60.13(d)(1); 40 CFR 60.13(d)(2); 40 CFR 60.13(e)(1); 40 CFR 60.13(e)(2); 40 CFR 60.13(f); 40 CFR 60.13(g); 40 CFR 60.13(h)(1); 40 CFR 60.13(h)(2); 40 CFR 60.13(h)(3); 40 CFR 60.13(i)(1); 40 CFR 60.13(i)(2); 40 CFR 60.13(i)(3); 40 CFR 60.13(i)(4); 40 CFR 60.13(i)(5); 40 CFR 60.13(i)(6); 40 CFR 60.13(i)(7); 40 CFR 60.13(i)(8); 40 CFR 60.13(i)(9); 40 CFR 60.13(j)(1); 40 CFR 60.13(j)(2); 40 CFR 60.14(a); 40 CFR 60.14(b); 40 CFR 60.14(c); 40 CFR 60.14(e); 40 CFR 60.14(f); 40 CFR 60.14(g); 40 CFR 60.14(h); 40 CFR 60.14(i); 40 CFR 60.14(j); 40 CFR 60.14(k); 40 CFR 60.14(l); 40 CFR 60.15(a); 40 CFR 60.15(b); 40 CFR 60.15(c); 40 CFR 60.15(d); 40 CFR 60.15(e); 40 CFR 60.15(f); 40 CFR 60.15(g); 40 CFR 60.17; 40 CFR 60.18(b)-(f); 40 CFR 60.18(g)-(i); 40 CFR 60.19(a); 40 CFR 60.19(b); 40 CFR 60.19(c); 40 CFR 60.19(d); 40 CFR 60.19(e); 40 CFR 60.19(f)(1); 40 CFR 60.19(f)(2); 40 CFR 60.19(f)(3); and 40 CFR 60.19(f)(4). A copy of 40 CFR pt. 60, subp. A is included in Appendix K. If the standard changes or upon adoption of a new or amended federal applicable requirement, and if there are more than 3 years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [40 CFR pt. 60, subp. A, Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150-7007.1500, Minn. R. 7011.0050, Minn. R. 7017.1010 & 7017.2025, Minn. R. 7019.0100]
EQUI 120	28090	EQUI 120 is a new affected source as defined under 40 CFR pt. 63, subp. ZZZZ, and the facility is an area source as defined at 40 CFR Section 63.2. The Permittee shall meet the requirements of 40 CFR pt. 63, subp. ZZZZ by meeting the requirements of 40 CFR pt. 60, subp. IIII. No further requirements of 40 CFR pt. 63, subp. ZZZZ apply to EQUI 120. [40 CFR 63.6590(c), Minn. R. 7011.8150]
EQUI 121	3170	The Permittee must limit Process Throughput <= 290.53 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 121	3180	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 121, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 121 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 121	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 121 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 121	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 121 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 121	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI121PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI121FPM10 = (A x B x 0.05) / 24 Where: EQUI121PM10 = daily average PM10 stack emissions from EQUI 121, in pounds/hour; EQUI121FPM10 = daily average uncaptured PM10 emissions from EQUI 121, in pounds/hour; A = total weight of lead-containing material processed by EQUI 121 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 121 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 121	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI121PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI121FPM2.5 = (A x C x 0.05) / 24 Where: EQUI121PM2.5 = daily average PM2.5 stack emissions from EQUI 121, in pounds/hour; EQUI121FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 121, in pounds/hour; A = total weight of lead-containing material processed by EQUI 121 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 121 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 121	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI121L = D x E EQUI121FL = D x H x 0.05 Where: EQUI121L = total lead stack emissions from EQUI 121, in pounds/day; EQUI121FL = total uncaptured lead emissions from EQUI 121, in pounds/day; D = total weight of lead-containing material processed by EQUI 121 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 121 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 121 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 121	6430	The Permittee shall vent captured emissions from EQUI 121 to control equipment meeting the requirements of TREA 25 and TREA 61 operated in-series, and COMG 12 whenever EQUI 121 operates. The emissions from EQUI 121 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 121	6450	The Permittee shall vent captured emissions from EQUI 121 to a stack/vent meeting the requirements of STRU 15 whenever EQUI 121 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 121	19650	The Permittee shall vent uncaptured emissions from EQUI 121 to a stack/vent meeting the requirements of STRU 48 whenever EQUI 121 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 121	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 121	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 121	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 121	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 121	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 121	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 121	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 121	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 121	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 122	3455	The Permittee must limit Process Throughput <= 872.10 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 122	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 122, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 122 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 122	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 122 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 122	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 122 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 122	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI122PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI122FPM10 = (A x B x 0.05) / 24 Where: EQUI122PM10 = daily average PM10 stack emissions from EQUI 122, in pounds/hour; EQUI122FPM10 = daily average uncaptured PM10 emissions from EQUI 122, in pounds/hour; A = total weight of lead-containing material processed by EQUI 122 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 122 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 122	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI122PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI122FPM2.5 = (A x C x 0.05) / 24 Where: EQUI122PM2.5 = daily average PM2.5 stack emissions from EQUI 122, in pounds/hour; EQUI122FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 122, in pounds/hour; A = total weight of lead-containing material processed by EQUI 122 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 122 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 122	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI122L = D x E EQUI122FL = D x H x 0.05 Where: EQUI122L = total lead stack emissions from EQUI 122, in pounds/day; EQUI122FL = total uncaptured lead emissions from EQUI 122, in pounds/day; D = total weight of lead-containing material processed by EQUI 122 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 122 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 122 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 122	6430	The Permittee shall vent captured emissions from EQUI 122 to control equipment meeting the requirements of TREA 25 and TREA 61 operated in-series, and COMG 12 whenever EQUI 122 operates. The emissions from EQUI 122 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 122	6450	The Permittee shall vent captured emissions from EQUI 122 to a stack/vent meeting the requirements of STRU 15 whenever EQUI 122 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 122	19650	The Permittee shall vent uncaptured emissions from EQUI 122 to a stack/vent meeting the requirements of STRU 48 whenever EQUI 122 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 122	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 122	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 122	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 122	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 122	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 122	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 122	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 122	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 122	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 123	3455	The Permittee must limit Process Throughput <= 401.24 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 123	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 123, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 123 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 123	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 123 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 123	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 123 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 123	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI123PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI123FPM10 = (A x B x 0.05) / 24 Where: EQUI123PM10 = daily average PM10 stack emissions from EQUI 123, in pounds/hour; EQUI123FPM10 = daily average uncaptured PM10 emissions from EQUI 123, in pounds/hour; A = total weight of lead-containing material processed by EQUI 123 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 123 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 123	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI123PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI123FPM2.5 = (A x C x 0.05) / 24 Where: EQUI123PM2.5 = daily average PM2.5 stack emissions from EQUI 123, in pounds/hour; EQUI123FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 123, in pounds/hour; A = total weight of lead-containing material processed by EQUI 123 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 123 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 123	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI123L = D x E EQUI123FL = D x H x 0.05 Where: EQUI123L = total lead stack emissions from EQUI 123, in pounds/day; EQUI123FL = total uncaptured lead emissions from EQUI 123, in pounds/day; D = total weight of lead-containing material processed by EQUI 123 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 123 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 123 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 123	6430	The Permittee shall vent captured emissions from EQUI 123 to control equipment meeting the requirements of TREA 25 and TREA 61 operated in-series, and COMG 12 whenever EQUI 123 operates. The emissions from EQUI 123 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 123	6450	The Permittee shall vent captured emissions from EQUI 123 to a stack/vent meeting the requirements of STRU 15 whenever EQUI 123 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 123	19650	The Permittee shall vent uncaptured emissions from EQUI 123 to a stack/vent meeting the requirements of STRU 49 whenever EQUI 123 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 123	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 123	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 123	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 123	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 123	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 123	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 123	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 123	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 123	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 124	3455	The Permittee must limit Process Throughput <= 500.01 pounds per day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 124	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 124, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 124 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 124	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 124 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 124	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 124 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 124	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI124PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI124FPM10 = (A x B x 0.05) / 24 Where: EQUI124PM10 = daily average PM10 stack emissions from EQUI 124, in pounds/hour; EQUI124FPM10 = daily average uncaptured PM10 emissions from EQUI 124, in pounds/hour; A = total weight of lead-containing material processed by EQUI 124 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 124 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 124	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI124PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI124FPM2.5 = (A x C x 0.05) / 24 Where: EQUI124PM2.5 = daily average PM2.5 stack emissions from EQUI 124, in pounds/hour; EQUI124FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 124, in pounds/hour; A = total weight of lead-containing material processed by EQUI 124 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 124 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 124	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI124L = D x E EQUI124FL = D x H x 0.05 Where: EQUI124L = total lead stack emissions from EQUI 124, in pounds/day; EQUI124FL = total uncaptured lead emissions from EQUI 124, in pounds/day; D = total weight of lead-containing material processed by EQUI 124 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 124 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 124 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 124	6430	The Permittee shall vent captured emissions from EQUI 124 to control equipment meeting the requirements of TREA 26 and TREA 63 operated in-series, and COMG 12 whenever EQUI 124 operates. The emissions from EQUI 124 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 124	6450	The Permittee shall vent captured emissions from EQUI 124 to a stack/vent meeting the requirements of STRU 16 whenever EQUI 124 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 124	19650	The Permittee shall vent uncaptured emissions from EQUI 124 to a stack/vent meeting the requirements of STRU 43 whenever EQUI 124 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 124	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 124	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 124	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 124	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 124	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 124	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 124	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 124	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 124	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 125	3455	The Permittee must limit Process Throughput <= 233.75 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 125	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 125, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 125 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 125	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 125 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 125	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 125 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 125	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI125PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI125FPM10 = (A x B x 0.05) / 24 Where: EQUI125PM10 = daily average PM10 stack emissions from EQUI 125, in pounds/hour; EQUI125FPM10 = daily average uncaptured PM10 emissions from EQUI 125, in pounds/hour; A = total weight of lead-containing material processed by EQUI 125 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 125 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 125	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI125PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI125FPM2.5 = (A x C x 0.05) / 24 Where: EQUI125PM2.5 = daily average PM2.5 stack emissions from EQUI 125, in pounds/hour; EQUI125FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 125, in pounds/hour; A = total weight of lead-containing material processed by EQUI 125 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 125 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 125	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI125L = D x E EQUI125FL = D x H x 0.05 Where: EQUI125L = total lead stack emissions from EQUI 125, in pounds/day; EQUI125FL = total uncaptured lead emissions from EQUI 125, in pounds/day; D = total weight of lead-containing material processed by EQUI 125 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 125 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 125 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 125	6430	The Permittee shall vent captured emissions from EQUI 125 to control equipment meeting the requirements of TREA 26 and TREA 63 operated in-series, and COMG 12 whenever EQUI 125 operates. The emissions from EQUI 125 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 125	6450	The Permittee shall vent captured emissions from EQUI 125 to a stack/vent meeting the requirements of STRU 16 whenever EQUI 125 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 125	19650	The Permittee shall vent uncaptured emissions from EQUI 125 to a stack/vent meeting the requirements of STRU 50 whenever EQUI 125 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 125	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 125	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 125	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 125	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 125	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 125	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 125	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 125	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 125	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 126	3455	The Permittee must limit Process Throughput <= 530.77 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 126	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 126, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 126 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 126	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 126 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 126	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 126 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 126	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI126PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI126FPM10 = (A x B x 0.05) / 24 Where: EQUI126PM10 = daily average PM10 stack emissions from EQUI 126, in pounds/hour; EQUI126FPM10 = daily average uncaptured PM10 emissions from EQUI 126, in pounds/hour; A = total weight of lead-containing material processed by EQUI 126 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 126 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 126	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI126PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI126FPM2.5 = (A x C x 0.05) / 24 Where: EQUI126PM2.5 = daily average PM2.5 stack emissions from EQUI 126, in pounds/hour; EQUI126FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 126, in pounds/hour; A = total weight of lead-containing material processed by EQUI 126 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 126 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 126	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI126L = D x E EQUI126FL = D x H x 0.05 Where: EQUI126L = total lead stack emissions from EQUI 126, in pounds/day; EQUI126FL = total uncaptured lead emissions from EQUI 126, in pounds/day; D = total weight of lead-containing material processed by EQUI 126 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 126 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 126 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 126	6430	The Permittee shall vent captured emissions from EQUI 126 to control equipment meeting the requirements of TREA 26 and TREA 62 operated in-series, and COMG 12 whenever EQUI 126 operates. The emissions from EQUI 126 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 126	6450	The Permittee shall vent captured emissions from EQUI 126 to a stack/vent meeting the requirements of STRU 16 whenever EQUI 126 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 126	19650	The Permittee shall vent uncaptured emissions from EQUI 126 to a stack/vent meeting the requirements of STRU 50 whenever EQUI 126 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 126	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 126	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 126	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 126	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 126	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 126	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 126	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 126	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 126	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 127	3455	The Permittee must limit Process Throughput <= 129.56 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 127	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 127, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 127 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 127	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 127 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 127	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 127 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 127	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI127PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI127FPM10 = (A x B x 0.05) / 24 Where: EQUI127PM10 = daily average PM10 stack emissions from EQUI 127, in pounds/hour; EQUI127FPM10 = daily average uncaptured PM10 emissions from EQUI 127, in pounds/hour; A = total weight of lead-containing material processed by EQUI 127 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 127 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 127	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI127PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI127FPM2.5 = (A x C x 0.05) / 24 Where: EQUI127PM2.5 = daily average PM2.5 stack emissions from EQUI 127, in pounds/hour; EQUI127FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 127, in pounds/hour; A = total weight of lead-containing material processed by EQUI 127 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 127 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 127	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI127L = D x E EQUI127FL = D x H x 0.05 Where: EQUI127L = total lead stack emissions from EQUI 127, in pounds/day; EQUI127FL = total uncaptured lead emissions from EQUI 127, in pounds/day; D = total weight of lead-containing material processed by EQUI 127 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 127 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 127 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 127	6430	The Permittee shall vent captured emissions from EQUI 127 to control equipment meeting the requirements of TREA 27 and TREA 64 operated in-series, and COMG 12 whenever EQUI 127 operates. The emissions from EQUI 127 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 127	6450	The Permittee shall vent captured emissions from EQUI 127 to a stack/vent meeting the requirements of STRU 17 whenever EQUI 127 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 127	19650	The Permittee shall vent uncaptured emissions from EQUI 127 to a stack/vent meeting the requirements of STRU 47 whenever EQUI 127 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 127	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 127	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 127	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 127	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 127	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 127	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 127	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 127	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 127	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 128	3455	The Permittee must limit Process Throughput <= 399.71 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 128	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 128, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 128 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 128	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 128 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 128	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 128 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 128	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI128PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI128FPM10 = (A x B x 0.05) / 24 Where: EQUI128PM10 = daily average PM10 stack emissions from EQUI 128, in pounds/hour; EQUI128FPM10 = daily average uncaptured PM10 emissions from EQUI 128, in pounds/hour; A = total weight of lead-containing material processed by EQUI 128 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 128 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 128	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI128PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI128FPM2.5 = (A x C x 0.05) / 24 Where: EQUI128PM2.5 = daily average PM2.5 stack emissions from EQUI 128, in pounds/hour; EQUI128FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 128, in pounds/hour; A = total weight of lead-containing material processed by EQUI 128 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 128 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 128	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI128L = D x E EQUI128FL = D x H x 0.05 Where: EQUI128L = total lead stack emissions from EQUI 128, in pounds/day; EQUI128FL = total uncaptured lead emissions from EQUI 128, in pounds/day; D = total weight of lead-containing material processed by EQUI 128 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 128 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 128 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 128	6430	The Permittee shall vent captured emissions from EQUI 128 to control equipment meeting the requirements of TREA 27 and TREA 64 operated in-series, and COMG 12 whenever EQUI 128 operates. The emissions from EQUI 128 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 128	6450	The Permittee shall vent captured emissions from EQUI 128 to a stack/vent meeting the requirements of STRU 17 whenever EQUI 128 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 128	19650	The Permittee shall vent uncaptured emissions from EQUI 128 to a stack/vent meeting the requirements of STRU 47 whenever EQUI 128 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 128	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 128	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 128	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 128	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 128	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 128	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 128	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 128	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 128	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 129	3455	The Permittee must limit Process Throughput <= 220.83 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 129	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 129, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 129 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 129	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 129 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 129	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 129 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 129	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI129PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI129FPM10 = (A x B x 0.05) / 24 Where: EQUI129PM10 = daily average PM10 stack emissions from EQUI 129, in pounds/hour; EQUI129FPM10 = daily average uncaptured PM10 emissions from EQUI 129, in pounds/hour; A = total weight of lead-containing material processed by EQUI 129 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 129 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 129	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI129PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI129FPM2.5 = (A x C x 0.05) / 24 Where: EQUI129PM2.5 = daily average PM2.5 stack emissions from EQUI 129, in pounds/hour; EQUI129FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 129, in pounds/hour; A = total weight of lead-containing material processed by EQUI 129 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 129 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 129	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI129L = D x E EQUI129FL = D x H x 0.05 Where: EQUI129L = total lead stack emissions from EQUI 129, in pounds/day; EQUI129FL = total uncaptured lead emissions from EQUI 129, in pounds/day; D = total weight of lead-containing material processed by EQUI 129 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 129 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 129 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 129	6430	The Permittee shall vent captured emissions from EQUI 129 to control equipment meeting the requirements of TREA 27 and TREA 64 operated in-series, and COMG 12 whenever EQUI 129 operates. The emissions from EQUI 129 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 129	6450	The Permittee shall vent captured emissions from EQUI 129 to a stack/vent meeting the requirements of STRU 17 whenever EQUI 129 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 129	19650	The Permittee shall vent uncaptured emissions from EQUI 129 to a stack/vent meeting the requirements of STRU 47 whenever EQUI 129 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 129	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 129	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 129	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 129	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 129	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 129	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 129	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 129	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 129	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 130	3455	The Permittee must limit Process Throughput <= 204.30 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 130	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 130, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 130 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 130	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 130 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 130	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 130 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 130	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI130PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI130FPM10 = (A x B x 0.05) / 24 Where: EQUI130PM10 = daily average PM10 stack emissions from EQUI 130, in pounds/hour; EQUI130FPM10 = daily average uncaptured PM10 emissions from EQUI 130, in pounds/hour; A = total weight of lead-containing material processed by EQUI 130 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 130 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 130	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI130PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI130FPM2.5 = (A x C x 0.05) / 24 Where: EQUI130PM2.5 = daily average PM2.5 stack emissions from EQUI 130, in pounds/hour; EQUI130FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 130, in pounds/hour; A = total weight of lead-containing material processed by EQUI 130 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 130 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 130	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI130L = D x E EQUI130FL = D x H x 0.05 Where: EQUI130L = total lead stack emissions from EQUI 130, in pounds/day; EQUI130FL = total uncaptured lead emissions from EQUI 130, in pounds/day; D = total weight of lead-containing material processed by EQUI 130 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 130 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 130 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 130	6430	The Permittee shall vent captured emissions from EQUI 130 to control equipment meeting the requirements of TREA 78 and TREA 65 operated in-series, and COMG 12 whenever EQUI 130 operates. The emissions from EQUI 130 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 130	6450	The Permittee shall vent captured emissions from EQUI 130 to a stack/vent meeting the requirements of STRU 74 whenever EQUI 130 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 130	19650	The Permittee shall vent uncaptured emissions from EQUI 130 to a stack/vent meeting the requirements of STRU 44 whenever EQUI 130 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 130	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 130	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 130	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 130	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 130	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 130	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 130	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 130	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 130	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 131	3455	The Permittee must limit Process Throughput <= 634.27 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 131	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 131, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 131 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 131	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 131 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 131	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 131 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 131	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI131PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI131FPM10 = (A x B x 0.05) / 24 Where: EQUI131PM10 = daily average PM10 stack emissions from EQUI 131, in pounds/hour; EQUI131FPM10 = daily average uncaptured PM10 emissions from EQUI 131, in pounds/hour; A = total weight of lead-containing material processed by EQUI 131 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 131 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 131	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI131PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI131FPM2.5 = (A x C x 0.05) / 24 Where: EQUI131PM2.5 = daily average PM2.5 stack emissions from EQUI 131, in pounds/hour; EQUI131FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 131, in pounds/hour; A = total weight of lead-containing material processed by EQUI 131 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 131 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 131	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI131L = D x E EQUI131FL = D x H x 0.05 Where: EQUI131L = total lead stack emissions from EQUI 131, in pounds/day; EQUI131FL = total uncaptured lead emissions from EQUI 131, in pounds/day; D = total weight of lead-containing material processed by EQUI 131 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 131 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 131 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 131	6430	The Permittee shall vent captured emissions from EQUI 131 to control equipment meeting the requirements of TREA 78 and TREA 65 operated in-series, and COMG 12 whenever EQUI 131 operates. The emissions from EQUI 131 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 131	6450	The Permittee shall vent captured emissions from EQUI 131 to a stack/vent meeting the requirements of STRU 74 whenever EQUI 131 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 131	19650	The Permittee shall vent uncaptured emissions from EQUI 131 to a stack/vent meeting the requirements of STRU 44 whenever EQUI 131 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 131	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 131	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 131	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 131	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 131	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 131	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 131	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 131	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 131	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 132	3455	The Permittee must limit Process Throughput <= 552.50 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 132	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 132, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 132 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 132	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 132 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 132	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 132 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 132	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI132PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI132FPM10 = (A x B x 0.05) / 24 Where: EQUI132PM10 = daily average PM10 stack emissions from EQUI 132, in pounds/hour; EQUI132FPM10 = daily average uncaptured PM10 emissions from EQUI 132, in pounds/hour; A = total weight of lead-containing material processed by EQUI 132 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 132 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 132	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI132PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI132FPM2.5 = (A x C x 0.05) / 24 Where: EQUI132PM2.5 = daily average PM2.5 stack emissions from EQUI 132, in pounds/hour; EQUI132FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 132, in pounds/hour; A = total weight of lead-containing material processed by EQUI 132 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 132 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 132	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI132L = D x E EQUI132FL = D x H x 0.05 Where: EQUI132L = total lead stack emissions from EQUI 132, in pounds/day; EQUI132FL = total uncaptured lead emissions from EQUI 132, in pounds/day; D = total weight of lead-containing material processed by EQUI 132 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 132 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 132 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 132	6430	The Permittee shall vent captured emissions from EQUI 132 to control equipment meeting the requirements of TREA 30 and TREA 66 operated in-series, and COMG 12 whenever EQUI 132 operates. The emissions from EQUI 132 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 132	6450	The Permittee shall vent captured emissions from EQUI 132 to a stack/vent meeting the requirements of STRU 20 whenever EQUI 132 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 132	19650	The Permittee shall vent uncaptured emissions from EQUI 132 to a stack/vent meeting the requirements of STRU 44 whenever EQUI 132 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 132	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 132	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 132	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 132	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 132	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 132	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 132	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 132	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 132	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 133	3455	The Permittee must limit Process Throughput <= 462.53 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 133	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 133, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 133 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 133	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 133 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 133	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 133 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 133	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI133PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI133FPM10 = (A x B x 0.05) / 24 Where: EQUI133PM10 = daily average PM10 stack emissions from EQUI 133, in pounds/hour; EQUI133FPM10 = daily average uncaptured PM10 emissions from EQUI 133, in pounds/hour; A = total weight of lead-containing material processed by EQUI 133 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 133 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 133	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI133PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI133FPM2.5 = (A x C x 0.05) / 24 Where: EQUI133PM2.5 = daily average PM2.5 stack emissions from EQUI 133, in pounds/hour; EQUI133FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 133, in pounds/hour; A = total weight of lead-containing material processed by EQUI 133 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 133 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 133	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI133L = D x E EQUI133FL = D x H x 0.05 Where: EQUI133L = total lead stack emissions from EQUI 133, in pounds/day; EQUI133FL = total uncaptured lead emissions from EQUI 133, in pounds/day; D = total weight of lead-containing material processed by EQUI 133 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 133 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 133 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 133	6430	The Permittee shall vent captured emissions from EQUI 133 to control equipment meeting the requirements of TREA 30 and TREA 66 operated in-series, and COMG 12 whenever EQUI 133 operates. The emissions from EQUI 133 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 133	6450	The Permittee shall vent captured emissions from EQUI 133 to a stack/vent meeting the requirements of STRU 20 whenever EQUI 133 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 133	19650	The Permittee shall vent uncaptured emissions from EQUI 133 to a stack/vent meeting the requirements of STRU 44 whenever EQUI 133 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 133	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 133	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 133	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 133	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 133	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 133	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 133	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 133	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 133	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 134	3455	The Permittee must limit Process Throughput <= 452.85 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 134	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 134, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 134 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 134	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 134 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 134	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 134 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 134	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI134PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI134FPM10 = (A x B x 0.05) / 24 Where: EQUI134PM10 = daily average PM10 stack emissions from EQUI 134, in pounds/hour; EQUI134FPM10 = daily average uncaptured PM10 emissions from EQUI 134, in pounds/hour; A = total weight of lead-containing material processed by EQUI 134 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 134 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 134	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI134PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI134FPM2.5 = (A x C x 0.05) / 24 Where: EQUI134PM2.5 = daily average PM2.5 stack emissions from EQUI 134, in pounds/hour; EQUI134FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 134, in pounds/hour; A = total weight of lead-containing material processed by EQUI 134 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 134 listed in Appendix D, as a fraction; and CE2 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 134	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI134L = D x E EQUI134FL = D x H x 0.05 Where: EQUI134L = total lead stack emissions from EQUI 134, in pounds/day; EQUI134FL = total uncaptured lead emissions from EQUI 134, in pounds/day; D = total weight of lead-containing material processed by EQUI 134 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 134 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 134 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 134	6430	The Permittee shall vent captured emissions from EQUI 134 to control equipment meeting the requirements of TREA 79 and TREA 67 operated in-series, and COMG 12 whenever EQUI 134 operates. The emissions from EQUI 134 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 134	6450	The Permittee shall vent captured emissions from EQUI 134 to a stack/vent meeting the requirements of STRU 75 whenever EQUI 134 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 134	19650	The Permittee shall vent uncaptured emissions from EQUI 134 to a stack/vent meeting the requirements of STRU 44 whenever EQUI 134 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 134	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 134	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 134	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 134	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 134	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 134	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 134	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 134	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 134	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 135	3455	The Permittee must limit Process Throughput <= 893.96 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 135	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 135, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 135 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 135	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 135 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 135	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 135 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 135	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI135PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI135FPM10 = (A x B x 0.05) / 24 Where: EQUI135PM10 = daily average PM10 stack emissions from EQUI 135, in pounds/hour; EQUI135FPM10 = daily average uncaptured PM10 emissions from EQUI 135, in pounds/hour; A = total weight of lead-containing material processed by EQUI 135 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 135 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 135	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI135PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI135FPM2.5 = (A x C x 0.05) / 24 Where: EQUI135PM2.5 = daily average PM2.5 stack emissions from EQUI 135, in pounds/hour; EQUI135FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 135, in pounds/hour; A = total weight of lead-containing material processed by EQUI 135 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 135 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 135	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI135L = D x E EQUI135FL = D x H x 0.05 Where: EQUI135L = total lead stack emissions from EQUI 135, in pounds/day; EQUI135FL = total uncaptured lead emissions from EQUI 135, in pounds/day; D = total weight of lead-containing material processed by EQUI 135 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 135 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 135 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 135	6430	The Permittee shall vent captured emissions from EQUI 135 to control equipment meeting the requirements of TREA 79 and TREA 67 operated in-series, and COMG 12 whenever EQUI 135 operates. The emissions from EQUI 135 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 135	6450	The Permittee shall vent captured emissions from EQUI 135 to a stack/vent meeting the requirements of STRU 75 whenever EQUI 135 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 135	19650	The Permittee shall vent uncaptured emissions from EQUI 135 to a stack/vent meeting the requirements of STRU 44 whenever EQUI 135 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 135	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 135	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 135	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 135	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 135	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 135	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 135	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 135	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 135	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 136	3455	The Permittee must limit Process Throughput <= 893.96 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 136	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 136, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 136 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 136	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 136 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 136	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 136 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 136	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI136PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI136FPM10 = (A x B x 0.05) / 24 Where: EQUI136PM10 = daily average PM10 stack emissions from EQUI 136, in pounds/hour; EQUI136FPM10 = daily average uncaptured PM10 emissions from EQUI 136, in pounds/hour; A = total weight of lead-containing material processed by EQUI 136 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 136 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 136	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI136PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI136FPM2.5 = (A x C x 0.05) / 24 Where: EQUI136PM2.5 = daily average PM2.5 stack emissions from EQUI 136, in pounds/hour; EQUI136FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 136, in pounds/hour; A = total weight of lead-containing material processed by EQUI 136 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 136 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 136	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI136L = D x E EQUI136FL = D x H x 0.05 Where: EQUI136L = total lead stack emissions from EQUI 136, in pounds/day; EQUI136FL = total uncaptured lead emissions from EQUI 136, in pounds/day; D = total weight of lead-containing material processed by EQUI 136 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 136 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 136 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 136	6430	The Permittee shall vent captured emissions from EQUI 136 to control equipment meeting the requirements of TREA 33 and TREA 68 operated in-series, and COMG 12 whenever EQUI 136 operates. The emissions from EQUI 136 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 136	6450	The Permittee shall vent captured emissions from EQUI 136 to a stack/vent meeting the requirements of STRU 23 whenever EQUI 136 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 136	19650	The Permittee shall vent uncaptured emissions from EQUI 136 to a stack/vent meeting the requirements of STRU 44 whenever EQUI 136 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 136	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 136	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 136	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 136	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 136	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 136	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 136	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 136	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 136	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 137	3455	The Permittee must limit Process Throughput <= 330.59 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 137	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 137, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 137 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 137	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 137 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 137	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 137 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 137	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI137PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI137FPM10 = (A x B x 0.05) / 24 Where: EQUI137PM10 = daily average PM10 stack emissions from EQUI 137, in pounds/hour; EQUI137FPM10 = daily average uncaptured PM10 emissions from EQUI 137, in pounds/hour; A = total weight of lead-containing material processed by EQUI 137 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 137 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 137	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI137PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI137FPM2.5 = (A x C x 0.05) / 24 Where: EQUI137PM2.5 = daily average PM2.5 stack emissions from EQUI 137, in pounds/hour; EQUI137FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 137, in pounds/hour; A = total weight of lead-containing material processed by EQUI 137 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 137 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 137	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI137L = D x E EQUI137FL = D x H x 0.05 Where: EQUI137L = total lead stack emissions from EQUI 137, in pounds/day; EQUI137FL = total uncaptured lead emissions from EQUI 137, in pounds/day; D = total weight of lead-containing material processed by EQUI 137 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 137 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 137 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 137	6430	The Permittee shall vent captured emissions from EQUI 137 to control equipment meeting the requirements of TREA 34 and TREA 69 operated in-series, and COMG 12 whenever EQUI 137 operates. The emissions from EQUI 137 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 137	6450	The Permittee shall vent captured emissions from EQUI 137 to a stack/vent meeting the requirements of STRU 24 whenever EQUI 137 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 137	19650	The Permittee shall vent uncaptured emissions from EQUI 137 to a stack/vent meeting the requirements of STRU 45 whenever EQUI 137 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 137	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 137	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 137	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 137	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 137	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 137	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 137	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 137	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 137	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 138	3455	The Permittee must limit Process Throughput <= 555.28 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 138	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 138, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 138 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 138	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 138 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 138	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 138 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 138	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI138PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI138FPM10 = (A x B x 0.05) / 24 Where: EQUI138PM10 = daily average PM10 stack emissions from EQUI 138, in pounds/hour; EQUI138FPM10 = daily average uncaptured PM10 emissions from EQUI 138, in pounds/hour; A = total weight of lead-containing material processed by EQUI 138 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 138 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 138	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI138PM2.5 = [A x C x 0.95 x (1 – CE1)] / 24 EQUI138FPM2.5 = (A x C x 0.05) / 24 Where: EQUI138PM2.5 = daily average PM2.5 stack emissions from EQUI 138, in pounds/hour; EQUI138FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 138, in pounds/hour; A = total weight of lead-containing material processed by EQUI 138 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 138 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 138	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI138L = D x E EQUI138FL = D x H x 0.05 Where: EQUI138L = total lead stack emissions from EQUI 138, in pounds/day; EQUI138FL = total uncaptured lead emissions from EQUI 138, in pounds/day; D = total weight of lead-containing material processed by EQUI 138 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 138 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 138 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 138	6430	The Permittee shall vent captured emissions from EQUI 138 to control equipment meeting the requirements of TREA 34 and TREA 69 operated in-series, and COMG 12 whenever EQUI 138 operates. The emissions from EQUI 138 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 138	6450	The Permittee shall vent captured emissions from EQUI 138 to a stack/vent meeting the requirements of STRU 24 whenever EQUI 138 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 138	19650	The Permittee shall vent uncaptured emissions from EQUI 138 to a stack/vent meeting the requirements of STRU 45 whenever EQUI 138 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 138	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 138	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 138	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 138	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 138	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 138	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 138	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 138	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 138	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 139	3455	The Permittee must limit Process Throughput <= 596.70 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 139	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 139, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 139 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 139	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 139 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 139	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 139 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 139	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI139PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI139FPM10 = (A x B x 0.05) / 24 Where: EQUI139PM10 = daily average PM10 stack emissions from EQUI 139, in pounds/hour; EQUI139FPM10 = daily average uncaptured PM10 emissions from EQUI 139, in pounds/hour; A = total weight of lead-containing material processed by EQUI 139 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 139 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 139	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI139PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI139FPM2.5 = (A x C x 0.05) / 24 Where: EQUI139PM2.5 = daily average PM2.5 stack emissions from EQUI 139, in pounds/hour; EQUI139FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 139, in pounds/hour; A = total weight of lead-containing material processed by EQUI 139 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 139 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 139	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI139L = D x E EQUI139FL = D x H x 0.05 Where: EQUI139L = total lead stack emissions from EQUI 139, in pounds/day; EQUI139FL = total uncaptured lead emissions from EQUI 139, in pounds/day; D = total weight of lead-containing material processed by EQUI 139 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 139 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 139 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 139	6430	The Permittee shall vent captured emissions from EQUI 139 to control equipment meeting the requirements of TREA 35 and TREA 70 operated in-series, and COMG 12 whenever EQUI 139 operates. The emissions from EQUI 139 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 139	6450	The Permittee shall vent captured emissions from EQUI 139 to a stack/vent meeting the requirements of STRU 25 whenever EQUI 139 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 139	19650	The Permittee shall vent uncaptured emissions from EQUI 139 to a stack/vent meeting the requirements of STRU 45 whenever EQUI 139 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 139	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 139	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 139	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 139	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 139	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 139	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 139	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 139	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 139	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 140	3455	The Permittee must limit Process Throughput <= 465.62 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 140	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 140, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 140 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 140	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 140 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 140	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 140 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 140	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI140PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI140FPM10 = (A x B x 0.05) / 24 Where: EQUI140PM10 = daily average PM10 stack emissions from EQUI 140, in pounds/hour; EQUI140FPM10 = daily average uncaptured PM10 emissions from EQUI 140, in pounds/hour; A = total weight of lead-containing material processed by EQUI 140 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 140 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 140	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI140PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI140FPM2.5 = (A x C x 0.05) / 24 Where: EQUI140PM2.5 = daily average PM2.5 stack emissions from EQUI 140, in pounds/hour; EQUI140FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 140, in pounds/hour; A = total weight of lead-containing material processed by EQUI 140 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 140 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 140	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI140L = D x E EQUI140FL = D x H x 0.05 Where: EQUI140L = total lead stack emissions from EQUI 140, in pounds/day; EQUI140FL = total uncaptured lead emissions from EQUI 140, in pounds/day; D = total weight of lead-containing material processed by EQUI 140 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 140 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 140 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 140	6430	The Permittee shall vent captured emissions from EQUI 140 to control equipment meeting the requirements of TREA 35 and TREA 70 operated in-series, and COMG 12 whenever EQUI 140 operates. The emissions from EQUI 140 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 140	6450	The Permittee shall vent captured emissions from EQUI 140 to a stack/vent meeting the requirements of STRU 25 whenever EQUI 140 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 140	19650	The Permittee shall vent uncaptured emissions from EQUI 140 to a stack/vent meeting the requirements of STRU 45 whenever EQUI 140 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 140	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 140	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 140	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 140	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 140	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 140	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 140	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 140	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 140	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 141	3455	The Permittee must limit Process Throughput <= 740.14 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 141	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 141, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 141 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 141	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 141 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 141	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 141 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 141	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI141PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI141FPM10 = (A x B x 0.05) / 24 Where: EQUI141PM10 = daily average PM10 stack emissions from EQUI 141, in pounds/hour; EQUI141FPM10 = daily average uncaptured PM10 emissions from EQUI 141, in pounds/hour; A = total weight of lead-containing material processed by EQUI 141 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 141 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 141	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI141PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI141FPM2.5 = (A x C x 0.05) / 24 Where: EQUI141PM2.5 = daily average PM2.5 stack emissions from EQUI 141, in pounds/hour; EQUI141FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 141, in pounds/hour; A = total weight of lead-containing material processed by EQUI 141 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 141 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 141	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI141L = D x E EQUI141FL = D x H x 0.05 Where: EQUI141L = total lead stack emissions from EQUI 141, in pounds/day; EQUI141FL = total uncaptured lead emissions from EQUI 141, in pounds/day; D = total weight of lead-containing material processed by EQUI 141 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 141 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 141 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 141	6430	The Permittee shall vent captured emissions from EQUI 141 to control equipment meeting the requirements of TREA 36 and TREA 71 operated in-series, and COMG 12 whenever EQUI 141 operates. The emissions from EQUI 141 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 141	6450	The Permittee shall vent captured emissions from EQUI 141 to a stack/vent meeting the requirements of STRU 26 whenever EQUI 141 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 141	19650	The Permittee shall vent uncaptured emissions from EQUI 141 to a stack/vent meeting the requirements of STRU 45 whenever EQUI 141 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 141	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 141	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 141	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 141	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 141	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 141	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 141	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 141	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 141	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 142	3455	The Permittee must limit Process Throughput <= 555.90 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 142	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 142, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 142 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 142	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 142 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 142	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 142 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 142	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI142PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI142FPM10 = (A x B x 0.05) / 24 Where: EQUI142PM10 = daily average PM10 stack emissions from EQUI 142, in pounds/hour; EQUI142FPM10 = daily average uncaptured PM10 emissions from EQUI 142, in pounds/hour; A = total weight of lead-containing material processed by EQUI 142 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 142 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 142	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI142PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI142FPM2.5 = (A x C x 0.05) / 24 Where: EQUI142PM2.5 = daily average PM2.5 stack emissions from EQUI 142, in pounds/hour; EQUI142FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 142, in pounds/hour; A = total weight of lead-containing material processed by EQUI 142 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 142 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 142	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI142L = D x E EQUI142FL = D x H x 0.05 Where: EQUI142L = total lead stack emissions from EQUI 142, in pounds/day; EQUI142FL = total uncaptured lead emissions from EQUI 142, in pounds/day; D = total weight of lead-containing material processed by EQUI 142 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 142 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 142 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 142	6430	The Permittee shall vent captured emissions from EQUI 142 to control equipment meeting the requirements of TREA 36 and TREA 72 operated in-series, and COMG 12 whenever EQUI 142 operates. The emissions from EQUI 142 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 142	6450	The Permittee shall vent captured emissions from EQUI 142 to a stack/vent meeting the requirements of STRU 26 whenever EQUI 142 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 142	19650	The Permittee shall vent uncaptured emissions from EQUI 142 to a stack/vent meeting the requirements of STRU 46 whenever EQUI 142 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 142	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 142	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 142	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 142	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 142	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 142	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 142	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 142	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 142	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 143	3455	The Permittee must limit Process Throughput <= 462.53 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 143	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 143, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 143 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 143	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 143 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 143	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 143 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 143	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI143PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI143FPM10 = (A x B x 0.05) / 24 Where: EQUI143PM10 = daily average PM10 stack emissions from EQUI 143, in pounds/hour; EQUI143FPM10 = daily average uncaptured PM10 emissions from EQUI 143, in pounds/hour; A = total weight of lead-containing material processed by EQUI 143 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 143 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 143	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI143PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI143FPM2.5 = (A x C x 0.05) / 24 Where: EQUI143PM2.5 = daily average PM2.5 stack emissions from EQUI 143, in pounds/hour; EQUI143FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 143, in pounds/hour; A = total weight of lead-containing material processed by EQUI 143 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 143 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 143	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI143L = D x E EQUI143FL = D x H x 0.05 Where: EQUI143L = total lead stack emissions from EQUI 143, in pounds/day; EQUI143FL = total uncaptured lead emissions from EQUI 143, in pounds/day; D = total weight of lead-containing material processed by EQUI 143 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 143 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 143 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 143	6430	The Permittee shall vent captured emissions from EQUI 143 to control equipment meeting the requirements of TREA 36 and TREA 71 operated in-series, and COMG 12 whenever EQUI 143 operates. The emissions from EQUI 143 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 143	6450	The Permittee shall vent captured emissions from EQUI 143 to a stack/vent meeting the requirements of STRU 26 whenever EQUI 143 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 143	19650	The Permittee shall vent uncaptured emissions from EQUI 143 to a stack/vent meeting the requirements of STRU 46 whenever EQUI 143 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 143	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 143	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 143	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 143	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 143	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 143	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 143	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 143	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 143	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 146	3455	The Permittee must limit Process Throughput <= 1199.66 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 146	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 146, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 146 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 146	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 146 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 146	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 146 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 146	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI146PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI146FPM10 = (A x B x 0.05) / 24 Where: EQUI146PM10 = daily average PM10 stack emissions from EQUI 146, in pounds/hour; EQUI146FPM10 = daily average uncaptured PM10 emissions from EQUI 146, in pounds/hour; A = total weight of lead-containing material processed by EQUI 146 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 146 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 146	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI146PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI146FPM2.5 = (A x C x 0.05) / 24 Where: EQUI146PM2.5 = daily average PM2.5 stack emissions from EQUI 146, in pounds/hour; EQUI146FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 146, in pounds/hour; A = total weight of lead-containing material processed by EQUI 146 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 146 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 146	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI146L = D x E EQUI146FL = D x H x 0.05 Where: EQUI146L = total lead stack emissions from EQUI 146, in pounds/day; EQUI146FL = total uncaptured lead emissions from EQUI 146, in pounds/day; D = total weight of lead-containing material processed by EQUI 146 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 146 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 146 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 146	6430	The Permittee shall vent captured emissions from EQUI 146 to control equipment meeting the requirements of TREA 39 and TREA 73 operated in-series, and COMG 12 whenever EQUI 146 operates. The emissions from EQUI 146 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 146	6450	The Permittee shall vent captured emissions from EQUI 146 to a stack/vent meeting the requirements of STRU 30 whenever EQUI 146 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 146	19650	The Permittee shall vent uncaptured emissions from EQUI 146 to a stack/vent meeting the requirements of STRU 53 whenever EQUI 146 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 146	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 146	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 146	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 146	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 146	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 146	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 146	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 146	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 146	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 147	3455	The Permittee must limit Process Throughput <= 1199.66 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 147	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 147, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 147 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 147	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 147 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 147	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 147 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 147	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI147PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI147FPM10 = (A x B x 0.05) / 24 Where: EQUI147PM10 = daily average PM10 stack emissions from EQUI 147, in pounds/hour; EQUI147FPM10 = daily average uncaptured PM10 emissions from EQUI 147, in pounds/hour; A = total weight of lead-containing material processed by EQUI 147 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 147 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 147	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI147PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI147FPM2.5 = (A x C x 0.05) / 24 Where: EQUI147PM2.5 = daily average PM2.5 stack emissions from EQUI 147, in pounds/hour; EQUI147FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 147, in pounds/hour; A = total weight of lead-containing material processed by EQUI 147 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 147 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 147	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI147L = D x E EQUI147FL = D x H x 0.05 Where: EQUI147L = total lead stack emissions from EQUI 147, in pounds/day; EQUI147FL = total uncaptured lead emissions from EQUI 147, in pounds/day; D = total weight of lead-containing material processed by EQUI 147 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 147 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 147 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 147	6430	The Permittee shall vent captured emissions from EQUI 147 to control equipment meeting the requirements of TREA 40 and TREA 74 operated in-series, and COMG 12 whenever EQUI 147 operates. The emissions from EQUI 147 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 147	6450	The Permittee shall vent captured emissions from EQUI 147 to a stack/vent meeting the requirements of STRU 31 whenever EQUI 147 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 147	19650	The Permittee shall vent uncaptured emissions from EQUI 147 to a stack/vent meeting the requirements of STRU 52 whenever EQUI 147 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 147	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 147	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 147	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 147	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 147	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 147	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 147	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 147	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 147	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 149	3455	The Permittee must limit Process Throughput <= 596.70 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 149	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 149, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 149 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 149	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 149 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 149	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 149 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 149	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI149PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI149FPM10 = (A x B x 0.05) / 24 Where: EQUI149PM10 = daily average PM10 stack emissions from EQUI 149, in pounds/hour; EQUI149FPM10 = daily average uncaptured PM10 emissions from EQUI 149, in pounds/hour; A = total weight of lead-containing material processed by EQUI 149 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 149 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 149	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI149PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI149FPM2.5 = (A x C x 0.05) / 24 Where: EQUI149PM2.5 = daily average PM2.5 stack emissions from EQUI 149, in pounds/hour; EQUI149FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 149, in pounds/hour; A = total weight of lead-containing material processed by EQUI 149 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 149 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 149	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI149L = D x E EQUI149FL = D x H x 0.05 Where: EQUI149L = total lead stack emissions from EQUI 149, in pounds/day; EQUI149FL = total uncaptured lead emissions from EQUI 149, in pounds/day; D = total weight of lead-containing material processed by EQUI 149 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 149 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 149 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 149	6430	The Permittee shall vent captured emissions from EQUI 149 to control equipment meeting the requirements of TREA 41 and TREA 75 operated in-series, and COMG 12 whenever EQUI 149 operates. The emissions from EQUI 149 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 149	6450	The Permittee shall vent captured emissions from EQUI 149 to a stack/vent meeting the requirements of STRU 32 whenever EQUI 149 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 149	19650	The Permittee shall vent uncaptured emissions from EQUI 149 to a stack/vent meeting the requirements of STRU 51 whenever EQUI 149 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 149	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 149	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 149	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 149	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 149	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 149	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 149	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 149	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 149	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 150	3455	The Permittee must limit Process Throughput <= 613.11 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 150	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 150, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 150 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 150	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 150 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 150	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 150 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 150	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI150PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI150FPM10 = (A x B x 0.05) / 24 Where: EQUI150PM10 = daily average PM10 stack emissions from EQUI 150, in pounds/hour; EQUI150FPM10 = daily average uncaptured PM10 emissions from EQUI 150, in pounds/hour; A = total weight of lead-containing material processed by EQUI 150 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 150 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 150	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI150PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI150FPM2.5 = (A x G x 0.05) / 24 Where: EQUI150PM2.5 = daily average PM2.5 stack emissions from EQUI 150, in pounds/hour; EQUI150FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 150, in pounds/hour; A = total weight of lead-containing material processed by EQUI 150 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 150 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 150	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI150L = D x E EQUI150FL = D x H x 0.05 Where: EQUI150L = total lead stack emissions from EQUI 150, in pounds/day; EQUI150FL = total uncaptured lead emissions from EQUI 150, in pounds/day; D = total weight of lead-containing material processed by EQUI 150 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 150 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 150 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 150	6430	The Permittee shall vent captured emissions from EQUI 150 to control equipment meeting the requirements of TREA 41 and TREA 75 operated in-series, and COMG 12 whenever EQUI 150 operates. The emissions from EQUI 150 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 150	6450	The Permittee shall vent captured emissions from EQUI 150 to a stack/vent meeting the requirements of STRU 32 whenever EQUI 150 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 150	19650	The Permittee shall vent uncaptured emissions from EQUI 150 to a stack/vent meeting the requirements of STRU 53 whenever EQUI 150 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 150	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 150	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 150	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 150	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 150	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 150	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 150	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 150	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 150	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 152	3455	The Permittee must limit Process Throughput <= 1305.27 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 152	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 152, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 152 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 152	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 152 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 152	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 152 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 152	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI152PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI152FPM10 = (A x B x 0.05) / 24 Where: EQUI152PM10 = daily average PM10 stack emissions from EQUI 152, in pounds/hour; EQUI152FPM10 = daily average uncaptured PM10 emissions from EQUI 152, in pounds/hour; A = total weight of lead-containing material processed by EQUI 152 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 152 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 152	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI152PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI152FPM2.5 = (A x C x 0.05) / 24 Where: EQUI152PM2.5 = daily average PM2.5 stack emissions from EQUI 152, in pounds/hour; EQUI152FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 152, in pounds/hour; A = total weight of lead-containing material processed by EQUI 152 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 152 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 152	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI152L = D x E EQUI152FL = D x H x 0.05 Where: EQUI152L = total daily lead stack emissions, in pounds/day; EQUI152FL = total daily uncaptured lead emissions, in pounds/day; D = total weight of lead-containing material processed by EQUI 152 for the previous operating day, in tons/day; E = controlled lead emission factor for EQUI 152 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 152 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 152	6430	The Permittee shall vent captured emissions from EQUI 152 to control equipment meeting the requirements of TREA 42 and TREA 76 operated in-series, and COMG 12 whenever EQUI 152 operates. The emissions from EQUI 152 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 152	6450	The Permittee shall vent captured emissions from EQUI 152 to a stack/vent meeting the requirements of STRU 33 whenever EQUI 152 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 152	19650	The Permittee shall vent uncaptured emissions from EQUI 152 to a stack/vent meeting the requirements of STRU 51 whenever EQUI 152 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 152	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 152	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 152	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 152	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 152	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 152	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 152	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 152	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 152	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 153	3455	The Permittee must limit Process Throughput <= 1179.85 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 153	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 153, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 153 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 153	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 153 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 153	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 153 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 153	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI153PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI153FPM10 = (A x B x 0.05) / 24 Where: EQUI153PM10 = daily average PM10 stack emissions from EQUI 153, in pounds/hour; EQUI153FPM10 = daily average uncaptured PM10 emissions from EQUI 153, in pounds/hour; A = total weight of lead-containing material processed by EQUI 153 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 153 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 153	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI153PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI153FPM2.5 = (A x C x 0.05) / 24 Where: EQUI153PM2.5 = daily average PM2.5 stack emissions from EQUI 153, in pounds/hour; EQUI153FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 153, in pounds/hour; A = total weight of lead-containing material processed by EQUI 153 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 153 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 153	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI153L = D x E EQUI153FL = D x H x 0.05 Where: EQUI153L = total lead stack emissions from EQUI 153, in pounds/day; EQUI153FL = total uncaptured lead emissions from EQUI 153, in pounds/day; D = total weight of lead-containing material processed by EQUI 153 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 153 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 153 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 153	6430	The Permittee shall vent captured emissions from EQUI 153 to control equipment meeting the requirements of TREA 43 and TREA 77 operated in-series, and COMG 12 whenever EQUI 153 operates. The emissions from EQUI 153 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 153	6450	The Permittee shall vent captured emissions from EQUI 153 to a stack/vent meeting the requirements of STRU 34 whenever EQUI 153 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 153	19650	The Permittee shall vent uncaptured emissions from EQUI 153 to a stack/vent meeting the requirements of STRU 56 whenever EQUI 153 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 153	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 153	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 153	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 153	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 153	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 153	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 153	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 153	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 153	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 154	3455	The Permittee must limit Process Throughput <= 1132.90 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 154	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 154, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 154 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 154	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 154 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 154	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 154 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 154	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI154PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI154FPM10 = (A x B x 0.05) / 24 Where: EQUI154PM10 = daily average PM10 stack emissions from EQUI 154, in pounds/hour; EQUI154FPM10 = daily average uncaptured PM10 emissions from EQUI 154, in pounds/hour; A = total weight of lead-containing material processed by EQUI 154 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 154 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 154	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI154PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI154FPM2.5 = (A x C x 0.05) / 24 Where: EQUI154PM2.5 = daily average PM2.5 stack emissions from EQUI 154, in pounds/hour; EQUI154FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 154, in pounds/hour; A = total weight of lead-containing material processed by EQUI 154 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 154 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 154	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI154L = D x E EQUI154FL = D x H x 0.05 Where: EQUI154L = total lead stack emissions from EQUI 154, in pounds/day; EQUI154FL = total uncaptured lead emissions from EQUI 154, in pounds/day; D = total weight of lead-containing material processed by EQUI 154 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 154 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 154 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 154	6430	The Permittee shall vent captured emissions from EQUI 154 to control equipment meeting the requirements of TREA 43 and TREA 77 operated in-series, and COMG 12 whenever EQUI 154 operates. The emissions from EQUI 154 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 154	6450	The Permittee shall vent captured emissions from EQUI 154 to a stack/vent meeting the requirements of STRU 34 whenever EQUI 154 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 154	19650	The Permittee shall vent uncaptured emissions from EQUI 154 to a stack/vent meeting the requirements of STRU 51 whenever EQUI 154 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 154	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 154	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 154	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 154	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 154	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 154	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 154	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 154	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 154	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 155	3455	The Permittee must limit Process Throughput <= 462.53 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 155	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 155, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 155 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 155	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 155 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 155	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 155 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 155	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI155PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI155FPM10 = (A x B x 0.05) / 24 Where: EQUI155PM10 = daily average PM10 stack emissions from EQUI 155, in pounds/hour; EQUI155FPM10 = daily average uncaptured PM10 emissions from EQUI 155, in pounds/hour; A = total weight of lead-containing material processed by EQUI 155 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 155 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 155	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI155PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI155FPM2.5 = (A x C x 0.05) / 24 Where: EQUI155PM2.5 = daily average PM2.5 stack emissions from EQUI 155, in pounds/hour; EQUI155FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 155, in pounds/hour; A = total weight of lead-containing material processed by EQUI 155 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 155 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 155	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI155L = D x E EQUI155FL = D x H x 0.05 Where: EQUI155L = total lead stack emissions from EQUI 155, in pounds/day; EQUI155FL = total uncaptured lead emissions from EQUI 155, in pounds/day; D = total weight of lead-containing material processed by EQUI 155 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 155 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 155 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 155	6430	The Permittee shall vent captured emissions from EQUI 155 to control equipment meeting the requirements of TREA 36 and TREA 71 operated in-series, and COMG 12 whenever EQUI 155 operates. The emissions from EQUI 155 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 155	6450	The Permittee shall vent captured emissions from EQUI 155 to a stack/vent meeting the requirements of STRU 26 whenever EQUI 155 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 155	19650	The Permittee shall vent uncaptured emissions from EQUI 155 to a stack/vent meeting the requirements of STRU 46 whenever EQUI 155 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 155	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 155	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 155	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 155	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 155	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 155	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 155	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 155	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 155	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 156	3455	The Permittee must limit Process Throughput <= 855.22 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 156	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 156, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 156 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 156	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 156 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 156	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 156 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 156	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI156PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI156FPM10 = (A x B x 0.05) / 24 Where: EQUI156PM10 = daily average PM10 stack emissions from EQUI 156, in pounds/hour; EQUI156FPM10 = daily average uncaptured PM10 emissions from EQUI 156, in pounds/hour; A = total weight of lead-containing material processed by EQUI 156 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 156 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 156	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI156PM2.5 = [A x C x 0.95 x (1 – CE1)] / 24 EQUI156FPM2.5 = (A x C x 0.05) / 24 Where: EQUI156PM2.5 = daily average PM2.5 stack emissions from EQUI 156, in pounds/hour; EQUI156FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 156, in pounds/hour; A = total weight of lead-containing material processed by EQUI 156 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 156 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 156	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI156L = D x E EQUI156FL = D x H x 0.05 Where: EQUI156L = total lead stack emissions from EQUI 156, in pounds/day; EQUI156FL = total uncaptured lead emissions from EQUI 156, in pounds/day; D = total weight of lead-containing material processed by EQUI 156 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 156 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 156 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 156	6430	The Permittee shall vent captured emissions from EQUI 156 to control equipment meeting the requirements of TREA 42 and TREA 76 operated in-series, and COMG 12 whenever EQUI 156 operates. The emissions from EQUI 156 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 156	6450	The Permittee shall vent captured emissions from EQUI 156 to a stack/vent meeting the requirements of STRU 33 whenever EQUI 156 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 156	19650	The Permittee shall vent uncaptured emissions from EQUI 156 to a stack/vent meeting the requirements of STRU 51 whenever EQUI 156 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 156	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 156	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 156	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 156	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 156	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 156	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 156	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 156	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 156	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 157	3455	The Permittee must limit Process Throughput <= 1305.27 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 157	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 157, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 157 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 157	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 157 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 157	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 157 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 157	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI157PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI157FPM10 = (A x B x 0.05) / 24 Where: EQUI157PM10 = daily average PM10 stack emissions from EQUI 157, in pounds/hour; EQUI157FPM10 = daily average uncaptured PM10 emissions from EQUI 157, in pounds/hour; A = total weight of lead-containing material processed by EQUI 157 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 157 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 157	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI157PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI157FPM2.5 = (A x C x 0.05) / 24 Where: EQUI157PM2.5 = daily average PM2.5 stack emissions from EQUI 157, in pounds/hour; EQUI157FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 157, in pounds/hour; A = total weight of lead-containing material processed by EQUI 157 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 157 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 157	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI157L = D x E EQUI157FL = D x H x 0.05 Where: EQUI157L = total daily lead stack emissions, in pounds/day; EQUI157FL = total daily uncaptured lead emissions, in pounds/day; D = total weight of lead-containing material processed by EQUI 157 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 157 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 157 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 157	6430	The Permittee shall vent captured emissions from EQUI 157 to control equipment meeting the requirements of TREA 26 and TREA 62 operated in-series, and COMG 12 whenever EQUI 157 operates. The emissions from EQUI 157 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 157	6450	The Permittee shall vent captured emissions from EQUI 157 to a stack/vent meeting the requirements of STRU 16 whenever EQUI 157 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 157	19650	The Permittee shall vent uncaptured emissions from EQUI 157 to a stack/vent meeting the requirements of STRU 56 whenever EQUI 157 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 157	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 157	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 157	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 157	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 157	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 157	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 157	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 157	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 157	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 158	3455	The Permittee must limit Process Throughput <= 1233.40 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 158	3460	Process Throughput: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 158, this shall be based on written usage logs; and 2) daily average of the hourly process throughput for EQUI 158 for the previous operating day. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 158	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 158 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 158	3470	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 158 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 158	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equations: EQUI158PM10 = [A x B x 0.95 x (1 – CE1)] / 24 EQUI158FPM10 = (A x B x 0.05) / 24 Where: EQUI158PM10 = daily average PM10 stack emissions from EQUI 158, in pounds/hour; EQUI158FPM10 = daily average uncaptured PM10 emissions from EQUI 158, in pounds/hour; A = total weight of lead-containing material processed by EQUI 158 for the previous operating day, in pounds/day; B = uncontrolled PM10 emission factor for EQUI 158 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 158	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equations: EQUI158PM2.5 = [A x C x 0.95 x (1 – CE2)] / 24 EQUI158FPM2.5 = (A x C x 0.05) / 24 Where: EQUI158PM2.5 = daily average PM2.5 stack emissions from EQUI 158, in pounds/hour; EQUI158FPM2.5 = daily average uncaptured PM2.5 emissions from EQUI 158, in pounds/hour; A = total weight of lead-containing material processed by EQUI 158 for the previous operating day, in pounds/day; C = uncontrolled PM2.5 emission factor for EQUI 158 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 12, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 158	3485	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equations: EQUI158L = D x E EQUI158FL = D x H x 0.05 Where: EQUI158L = total lead stack emissions from EQUI 158, in pounds/day; EQUI158FL = total uncaptured lead emissions from EQUI 158, in pounds/day; D = total weight of lead-containing material processed by EQUI 158 for the previous operating day, in pounds/day; E = controlled lead emission factor for EQUI 158 listed in Appendix D, as a fraction; and H = uncontrolled lead emission factor for EQUI 158 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 158	6430	The Permittee shall vent captured emissions from EQUI 158 to control equipment meeting the requirements of TREA 39 and TREA 73 operated in-series, and COMG 12 whenever EQUI 158 operates. The emissions from EQUI 158 shall be captured with a closed connection to control equipment. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 158	6450	The Permittee shall vent captured emissions from EQUI 158 to a stack/vent meeting the requirements of STRU 30 whenever EQUI 158 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 158	19650	The Permittee shall vent uncaptured emissions from EQUI 158 to a stack/vent meeting the requirements of STRU 52 whenever EQUI 158 operates. The uncaptured emissions shall be limited to emissions escaping the die cast casing. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 158	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 158	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 158	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 158	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 158	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 158	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

SI Id	Sequence	Requirement
EQUI 158	19666	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 158	19667	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 158	19668	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 160	3455	The Permittee must limit Process Throughput <= 1000.0 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 160	3460	The Permittee shall limit Process Throughput <= 24.0 pounds per hour 365-day rolling sum. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 160	3465	Process Throughput and Hours of Operation: Daily Recordkeeping. By 4:30 pm on each day of operation, the Permittee shall measure or calculate, record, and maintain a record of the following for the previous operating day: 1) the total weight of each lead-containing material processed by EQUI 160, this shall be based on written usage logs; 2) daily average of the hourly process throughput for EQUI 160 for the previous operating day; 3) average of the hourly process throughput for EQUI 160 for the previous 365-day period by calculating the average of the daily hourly process throughput for the previous 365 days; and 4) the time of the day when the EQUI 160 was operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 160	3470	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 160 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 160	3475	Lead: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of each lead-containing material processed by EQUI 160 in the previous operating day using the daily usage records; and 2) The total lead emissions for the previous operating day using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 160	3480	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equation: EQUI160PM10 = (A x B) / 24 Where: EQUI160PM10 = daily average PM10 stack emissions from EQUI 160, in pounds/hour; A = total weight of lead-containing material or pure tin processed by EQUI 160 for the previous operating day, in pounds/day; and B = uncontrolled PM10 emission factor for EQUI 160 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 160	3485	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equation: EQUI160PM2.5 = (A x C) / 24 Where: EQUI160PM2.5 = daily average PM2.5 stack emissions from EQUI 160, in pounds/hour; A = total weight of lead-containing material or pure tin processed by EQUI 160 for the previous operating day, in pounds/day; and C = uncontrolled PM2.5 emission factor for EQUI 160 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 160	6450	Lead: Daily Calculation. The Permittee shall calculate lead emissions using the following equation: EQUI160L = D x E Where: EQUI160L = total lead stack emissions from EQUI 160, in pounds/day; D = total weight of lead-containing material processed by EQUI 160 for the previous operating day, in pounds/day; and E = uncontrolled lead emission factor for EQUI 160 listed in Appendix D, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 160	19660	The Permittee shall vent emissions from EQUI 160 to a stack/vent meeting the requirements of STRU 35 whenever EQUI 160 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 160	19661	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 160	19662	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]

SI Id	Sequence	Requirement
EQUI 160	19663	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 160	19664	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. . Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 160	19665	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 160	19666	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 160	19667	Lead: Protocol for Re-Setting the Emission Factor Used For Calculating Lead Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 12 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound lead per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound lead per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 160	19668	Lead: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating Lead Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 160	19669	Lead: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 160	19670	The Permittee must limit the daily operation of EQUI 160 to the period between 5 am and 11 pm. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 166	1	The Permittee shall operate EQUI 166 in a permanent total enclosure meeting the requirements of COMG 5. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 166	2	The Permittee shall operate EQUI 166 meeting the requirements of COMG 1. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 172	1	The Permittee shall vent emissions from EQUI 172 to a stack/vent meeting the requirements of STRU 53 whenever EQUI 172 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 172	2	At the time of permit issuance, EQUI 172 is a water-based dip coater as described in Appendix B of this permit and shall comply with requirements under COMG 1. EQUI 172 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 172	3	The Permittee shall apply water-based coating from EQUI 172 using dip or drip application methods only unless it is modified as authorized elsewhere in this permit. Spray application of coating while venting emissions to STRU 53 is prohibited. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 173	1	The Permittee shall operate EQUI 173 in a permanent total enclosure meeting the requirements of COMG 5. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 173	2	The Permittee shall operate EQUI 173 meeting the requirements of COMG 1. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 174	1	The Permittee shall vent emissions from EQUI 174 to a stack/vent meeting the requirements of STRU 59 whenever EQUI 174 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 174	2	The Permittee shall operate EQUI 174 meeting the requirements of COMG 1. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 174	3	VOC Solvent Distiller Operation: The Permittee shall minimize fugitive VOC emissions and spills during filling, operation, emptying, and clean out of the VOC solvent distiller according to standard operating procedures, including the following: 1) Install a fill sensor or other fail-safe to prevent spilling of recycled VOC solvent during distillation; 2) Ensure that the operator of the distillation equipment remains in close proximity to the equipment while distillation is taking place; 3) Transfer recycled VOC solvent from distiller into containers that include secondary containment; and 4) Empty all distiller bottoms and other residue into a closed container and dispose as hazardous waste. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. ch. 7045, Minn. Stat. 116.385, subd. 3]
EQUI 174	4	The Permittee may only distill dirty solvent that contains 1,2-(trans-) Dichloroethylene from the parts soaker tank (EQUI 173). [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 174	5	1,2-(trans-) Dichloroethylene Content of Distilled Material: The Permittee shall determine the specific content of 1,2-(trans-) Dichloroethylene in distilled material, in weight percent, following the analysis procedure and frequency requirements in Appendix B. Alternatively, the Permittee may analyze the distilled material for VOC and assume all of the VOC in distilled material is 1,2-(trans-) Dichloroethylene. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 176	2200	1,2-(trans-) Dichloroethylene: Emissions Monitoring: The Permittee shall install, operate, and maintain a CEMS to measure 1,2-(trans-) Dichloroethylene emissions discharged to the atmosphere from STRU 73, and shall record the output of the system. [Minn. R. 7017.1006, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 176	2520	Certification Test Plan due 30 days before Certification Test. Certification Test Pretest Meeting due seven days before Certification Test. Certification Test Report due 45 days aGer Certification Test. The Test Plan and Test Report must be submitted in a format specified by the commissioner. [Minn. R. 7017.1060, subp. 1-3, Minn. R. 7017.1080]
EQUI 176	2530	Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment. [Minn. R. 7017.1090, Minn. Stat. 116.07, subd. 9(2)]
EQUI 176	2540	Monitoring Data: All data points collected by a CEMS shall be used to calculate individual hourly emission averages unless another applicable requirement requires more frequent averaging. Each hourly average starts at the beginning of the hour and ends at the beginning of the following hour. In order for an hour of data to be considered valid, it must contain the following minimum number of data points: A. four data points, equally spaced, if the emission unit operated during the entire hour; B. two data points, at least 15 minutes apart, during periods of monitor calibration or routine maintenance; C. one data point if the emission unit operated for 15 minutes or less during the hour. Monitoring data shall be recorded in the same units of measurement and averaging period as the facility's emission standard. [Minn. R. 7017.1160, Minn. Stat. 116.07, subd. 9(2)]
EQUI 176	2545	Certification Test Plan: The Permittee shall submit an approvable Certification Test Plan to the Commissioner that contains the following: 1) Name and address of emission facility; 2) Name, title, and telephone number of contact person at facility; 3) Permit number or name and data of applicable compliance document requiring test; 4) Statement of whether the test is an initial certification or a recertification; 5) Drawing of the monitoring system which indicates the location of the reference method ports and monitoring system probe location in relation to the nearest flow disturbances both upstream and downstream of the monitoring system as well as any monitor bypass routes; 6) Make, model, and serial number of the monitor and data recording system; 7) Name and telephone number of testing company; 8) Planned certification test date; 9) List of the performance specifications from Code of Federal Regulations, title 40, part 60, appendix B, which will be followed during the test; 10) List of the reference methods from Code of Federal Regulations, title 40, part 60, appendix A, which will be followed during the test; 11) Units of measurement under which the monitor will be certified, for example, lb/hr, ppm, lb/MMBtu; 12) Monitoring system's span, range, and calibration levels; and 13) Planned emission unit(s) operating range, for example, heat input, steam output, during the certification test. [Minn. R. 7017.1060, Minn. Stat. 116.07, subd. 9(2)]
EQUI 176	2550	QA Plan: Develop and implement a written quality assurance plan that covers each CEMS. The plan must be on site and available for inspection within 30 days after monitor certification. The plan must include the manufacturer's spare parts list for each CEMS and require that those parts be kept at the facility unless the Commissioner gives written approval to exclude specific spare parts from the list. [Minn. R. 7017.1170, subp. 2, Minn. Stat. 116.07, subd. 9(2)]

SI Id	Sequence	Requirement
EQUI 176	2560	CEMS Daily Calibration Drift (CD) Test: The CD shall be quantified and recorded at zero (low-level) and upscale (high-level) gas concentrations at least once daily according to the procedures listed in Minn. R. 7017.1170, subp. 3(A) and (B), 40 CFR Section 60.13(d)(1) or 40 CFR pt. 75, Appendix B as applicable for each pollutant concentration, each diluent monitor, and for each monitor range. If no span value is specified in the applicable requirement or in a compliance document, the Permittee shall use a span value equivalent to 1.5 times the emission limit. [Minn. R. 7017.1170, subp. 3, Minn. Stat. 116.07, subd. 9(2)]
EQUI 176	2570	Relative Accuracy Test Audit (RATA) Notification: due 30 days before CEMS Relative Accuracy Test Audit (RATA). [Minn. R. 7017.1180, subp. 2, Minn. Stat. 116.07, subd. 9(2)]
EQUI 176	2580	CEMS Certification/Recertification Test: due 90 days after the first excess emissions report required for the CEMS or any change which invalidates the monitor's certification status as outlined in Minn. R. 7017.1050, subp. 2. [Minn. R. 7017.1050, subp. 1, Minn. Stat. 116.07, subd. 9(2)]
EQUI 176	2645	Recordkeeping: The owner or operator must retain records of all CEMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source. [Minn. R. 7017.1130, Minn. Stat. 116.07, subd. 9(2)]
EQUI 176	2646	The Permittee shall submit start-up notification: Due 10 working days after Startup of Monitor Date. The report shall be certified by the responsible official as defined in Minn. R. 7007.0100, subp. 21(A). The notification shall be submitted electronically on Form CS-02. [Minn. R. 7007.0500, subp. 3, Minn. R. 7007.0800, subp. 2(A)]
EQUI 176	2647	The Permittee shall conduct CEMS cylinder gas audit (CGA): Due by the end of every second QA operating quarter (calendar quarter in which there are at least 168 unit operating hours) except that a CGA is not required during any quarter in which a RATA is performed. The initial CGA must be performed within 180 days following certification of the CEMS. The CGAs shall be conducted according to the procedures outlined in Minn. R. 7017.1170, subp 4a(A). If the monitored emission unit is not in operation on the CGA due date, the owner or operator has a grace period of 168 operating hours to perform the CGA. [Minn. R. 7017.1170, subp. 4a]
EQUI 176	2648	The Permittee shall conduct a relative accuracy test audit: Due by the end of every fourth QA operating quarter (calendar quarter in which there are at least 168 unit operating hours). RATAs shall be conducted and frequency may be reduced according to the procedures outlined in Minn. R. 7017.1170, subp. 5a. If the monitored emission unit is not in operation on the RATA due date, the owner or operator has a grace period of 720 operating hours to perform the RATA. [Minn. R. 7017.1170, subp. 5a]
EQUI 176	2649	Installation Notification: due 60 days before installing the continuous emissions monitoring system. The notification shall include plans and drawings of the system. Additionally, the notification shall include manufacture, model, parameter, and serial numbers of the continuous emissions monitoring system. [Minn. R. 7017.1040, subp. 1]
EQUI 219	2	At the time of permit issuance, EQUI 219 is a UV spray coater as described in Appendix B of this permit and shall comply with the requirements under COMG 1, COMG 2, and COMG 5. EQUI 219 may be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & (B) , Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 219	3	The Permittee shall vent emissions from EQUI 219 to control equipment meeting the requirements of TREA 58 whenever EQUI 219 operates. [Minn. R. 7007.0800, subps. 2(A) & (B) , Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 220	2	At the time of permit issuance, EQUI 220 is a UV spray coater as described in Appendix B of this permit and shall comply with the requirements under COMG 1, COMG 2, and COMG 5. EQUI 220 may be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
EQUI 220	3	The Permittee shall vent emissions from EQUI 220 to control equipment meeting the requirements of TREA 59 whenever EQUI 220 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 221	3455	The Permittee must limit Process Throughput <= 2500.0 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 221	3460	Process Throughput: Daily Recordkeeping. On each day of operation, the Permittee shall calculate, record, and maintain a record of the total weight of tin material processed by EQUI 221. This shall be based on written usage logs. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 221	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm each operating day, the Permittee shall calculate and record the following: 1) The total weight of pure tin processed by EQUI 221 for the previous operating day using daily usage records; 2) The total PM10 emissions for the previous operating day using the formulas specified in this permit; and 3) The total PM2.5 emissions for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
EQUI 221	3475	PM < 10 micron: Daily Calculation. The Permittee shall calculate PM10 emissions using the following equation: EQUI221PM10 = [A x B x (1-CE1)] / 24 Where: EQUI221PM10 = daily average PM10 emissions from EQUI 221, in pounds/hour; A = total weight of pure tin processed by EQUI 221 for the previous operating day, in pounds/day; and B = uncontrolled PM10 emission factor for EQUI 221 listed in Appendix D, as a fraction; and CE1 = minimum overall PM10 control efficiency required by COMG 11, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 221	3480	PM < 2.5 micron: Daily Calculation. The Permittee shall calculate PM2.5 emissions using the following equation: EQUI221PM2.5 = [A x C x (1-CE2)] / 24 Where: EQUI221PM2.5 = daily average PM2.5 emissions from EQUI 221, in pounds/hour; A = total weight of pure tin processed by EQUI 221 for the previous operating day, in pounds/day; and C = uncontrolled PM2.5 emission factor for EQUI 221 listed in Appendix D, as a fraction; and CE2 = minimum overall PM2.5 control efficiency required by COMG 11, as a fraction. [Minn. R. 7007.0800, subps. 4-5]
EQUI 221	6430	The Permittee shall vent melt emissions from EQUI 221 to control equipment meeting the requirements of TREA 1 and TREA 60 operated in-series, and COMG 11 whenever EQUI 221 operates. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 221	6450	The Permittee shall vent melt emissions from EQUI 221 to a stack/vent meeting the requirements of STRU 1 whenever EQUI 221 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 221	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 221	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 221	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 221	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 221	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 221	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 223	1879	The Permittee must limit the daily operation of EQUI 223 to the period between 5 am and 11 pm. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 223	1880	Daily Recordkeeping. On each day of operation, the Permittee shall record the time of the day when EQUI 223 was in operation. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 224	1879	The Permittee must limit the daily operation of EQUI 224 to the period between 5 am and 11 pm. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 224	1880	Daily Recordkeeping. On each day of operation, the Permittee shall record the time of the day when EQUI 224 was in operation. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 225	1879	The Permittee must limit the daily operation of EQUI 225 to the period between 5 am and 11 pm. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 225	1880	Daily Recordkeeping. On each day of operation, the Permittee shall record the time of the day when EQUI 225 was in operation. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 226	1879	The Permittee must limit the daily operation of EQUI 226 to the period between 5 am and 11 pm. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 226	1880	Daily Recordkeeping. On each day of operation, the Permittee shall record the time of the day when EQUI 226 was in operation. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 227	1879	The Permittee must limit the daily operation of EQUI 227 to the period between 5 am and 11 pm. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 227	1880	Daily Recordkeeping. On each day of operation, the Permittee shall record the time of the day when EQUI 227 was in operation. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 228	1879	The Permittee must limit the daily operation of EQUI 228 to the period between 5 am and 11 pm. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 228	1880	Daily Recordkeeping. On each day of operation, the Permittee shall record the time of the day when EQUI 228 was in operation. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 229	1879	The Permittee must limit the daily operation of EQUI 229 to the period between 5 am and 11 pm. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 229	1880	Daily Recordkeeping. On each day of operation, the Permittee shall record the time of the day when EQUI 229 was in operation. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 230	1879	The Permittee must limit the daily operation of EQUI 230 to the period between 5 am and 11 pm. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 230	1880	Daily Recordkeeping. On each day of operation, the Permittee shall record the time of the day when EQUI 230 was in operation. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 231	1879	The Permittee must limit the daily operation of EQUI 231 to the period between 5 am and 11 pm. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 231	1880	Daily Recordkeeping. On each day of operation, the Permittee shall record the time of the day when EQUI 231 was in operation. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 232	1879	The Permittee must limit the daily operation of EQUI 232 to the period between 5 am and 11 pm. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 232	1880	Daily Recordkeeping. On each day of operation, the Permittee shall record the time of the day when EQUI 232 was in operation. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 233	1	The Permittee shall vent emissions from EQUI 233 to a stack/vent meeting the requirements of STRU 50 whenever EQUI 233 operates. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 233	2	At the time of permit issuance, EQUI 233 is a water-based dip coater as described in Appendix B of this permit and shall comply with requirements under COMG 1. EQUI 233 may only be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subps. 2(A) & (B) , Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 233	3	The Permittee shall apply water-based coating from EQUI 172 using dip or drip application methods only unless it is modified as authorized elsewhere in this permit. Spray application of coating while venting emissions to STRU 50 is prohibited. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 240	1	The Permittee shall vent emissions from EQUI 240 to a stack/vent meeting the requirements of STRU 72 whenever EQUI 240 operates. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
EQUI 240	2	At the time of permit issuance, EQUI 240 is a UV spray coater as described in Appendix B of this permit and shall comply with the requirements under COMG 1. EQUI 240 shall comply with the requirements under COMG 2 except for having to comply with the following: 1) operate with control equipment meeting the requirements in COMG 14; and 2) operate in a coating room meeting the requirements of COMG 5. EQUI 240 may be modified as authorized elsewhere in the permit. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 240	3	The Permittee is prohibited from using any coating that contains any hazardous air pollutant (HAP), including the target HAPs as defined under 40 CFR Section 63.11180. [Minn. R. 7007.0800, subps. 2(A)]
EQUI 240	4	Daily Recordkeeping. On each day of operation, the Permittee shall calculate, record, and maintain a record of the total quantity of each coating and other solids-containing material, including the solids content of each coating (as a mass fraction), used by EQUI 240 and the time-of-day EQUI 240 was in operation. This shall be based on written usage logs. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
EQUI 240	3465	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate, record, and maintain a record of the following for the previous operating day using the daily usage records: 1) Total weight of UV coating used by EQUI 240, in pounds/day; and 2) Daily average hourly emissions of PM10 and PM2.5 from EQUI 240 as determined elsewhere in this permit, in pounds/hour. This record shall also include solids contents of each material as determined by the Material Content requirement of this permit. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 240	3475	PM < 10 micron: Daily Calculations. The Permittee shall calculate PM10 emissions from EQUI 240 using the following equations: EQUI240PM10 = I x J where: EQUI240PM10 = daily average PM10 emissions from EQUI 240, in pounds/hour; F = total weight of coating used in EQUI 240 based on daily usage logs, in pounds/day; and G = uncontrolled PM10 emission factor, in pounds PM10 per pound of coating, listed in Appendix B, as a fraction. Other uncontrolled emission factors allowed by this permit shall be based on the most recent MPCA-approved stack test results performed according to approved replicable methodology (ARM) requirements. [Minn. R. 7007.0800, subps. 4-5]
EQUI 240	3480	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate PM2.5 emissions from EQUI 240 using the following equations: EQUI240PM2.5 = I x K where: EQUI240PM2.5 = daily average PM2.5 emissions from EQUI 240, in pounds/hour; F = total weight of coating used in EQUI 240 based on daily usage logs, in pounds/day; and G = uncontrolled PM2.5 emission factor, in pounds PM2.5 per pound of coating, listed in Appendix B, as a fraction. Other uncontrolled emission factors allowed by this permit shall be based on the most recent MPCA-approved stack test results performed according to approved replicable methodology (ARM) requirements. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
EQUI 240	3481	Maximum Contents of Materials and Process Rate: The Permittee assumed certain worst-case contents of materials and process rates when determining the short-term potential to emit of EQUI 240. These assumptions are listed in Appendix B of this permit. Increasing the process rate or changing to a material that has a higher content of any of the given pollutants, or an addition of a pollutant not listed in Appendix B, is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150. [Minn. R. 7005.0100, subps. 35a]
EQUI 240	19660	PM < 10 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM10 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM10 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM10 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 240	19661	PM < 10 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM10 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 240	19662	PM < 10 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 240	19663	PM < 2.5 micron: Protocol for Re-Setting the Emission Factor Used For Calculating PM2.5 Emissions: The Permittee shall conduct performance testing under conditions that produce the maximum emission rate, using US EPA reference method 201A and 202 to measure the emission factor as required elsewhere in this permit. Another test method as approved by MPCA in the performance test plan may be used. The Permittee shall report the test result in pound PM2.5 per pound of lead-containing material in the performance test report required by Minn. R. 7017.2035, subp. 1. The emission factor used for calculating emissions shall be re-set to the 3-hour average emission rate in pound PM2.5 per pound of lead-containing material, measured during the most recent MPCA-approved emission factor performance test. The new emission factor used for calculating emissions determined using this Protocol shall be effective upon receipt of the Notice of Compliance (NOC) letter that approves the test results and shall be incorporated into the permit during the next permit amendment. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
EQUI 240	19664	PM < 2.5 micron: The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Emission Factor Used for Calculating PM2.5 Emissions established by this permit. [Minn. R. 7007.1500, subp. 1]
EQUI 240	19665	PM < 2.5 micron: Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the NOC letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
EQUI 240	19666	The Permittee must limit the daily operation of EQUI 240 to the period between 5 am and 11 pm. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
STRU 1	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.1012 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 1	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.1012 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 1	1862	The Permittee shall limit emissions of Lead <= 0.00297 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 1	1863	The Permittee shall limit emissions of Lead <= 1.0835 pounds per year 365-day rolling sum. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 1	1864	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 1 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 1 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 1	1865	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 1 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 1 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 1 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 1	1866	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 1 using the following equation: STRU1PM10 = EQUI101PM10 + EQUI102PM10 + EQUI103PM10 + EQUI104PM10 + EQUI221PM10 where: STRU1PM10 = total daily average PM10 emissions emitted through STRU 1 from EQUI 101, EQUI 102, EQUI 103, EQUI 104, and EQUI 221, in pounds/hour; EQUI101PM10 = total daily average PM10 stack emissions from EQUI 101, in pounds/hour; EQUI102PM10 = total daily average PM10 stack emissions from EQUI 102, in pounds/hour; EQUI103PM10 = total daily average PM10 stack emissions from EQUI 103, in pounds/hour; EQUI104PM10 = total daily average PM10 stack emissions from EQUI 104, in pounds/hour; and EQUI221PM10 = total daily average PM10 stack emissions from EQUI 221, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 1	1867	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 1 using the following equation: STRU1PM2.5 = EQUI101PM2.5 + EQUI102PM2.5 + EQUI103PM2.5 + EQUI104PM2.5 + EQUI221PM2.5 where: STRU1PM2.5 = total daily average PM2.5 emissions emitted through STRU 1 from EQUI 101, EQUI 102, EQUI 103, EQUI 104, and EQUI 221, in pounds/hour; EQUI101PM2.5 = total daily average PM2.5 stack emissions from EQUI 101, in pounds/hour; EQUI102PM2.5 = total daily average PM2.5 stack emissions from EQUI 102, in pounds/hour; EQUI103PM2.5 = total daily average PM2.5 stack emissions from EQUI 103, in pounds/hour; EQUI104PM2.5 = total daily average PM2.5 stack emissions from EQUI 104, in pounds/hour; and EQUI221PM2.5 = total daily average PM2.5 stack emissions from EQUI 221, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 1	1868	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 1 using the following equations: STRU1L = EQUI101L + EQUI102L + EQUI103L + EQUI 104L STRU1L3A = [(STRU1L2 + STRU1L3 + STRU1L4 +…+ STRU1L91 + STRU1L92 + STRU1L93) – STRU1L1] / 92 days where: STRU1L# = total daily lead emissions emitted through STRU 1 from EQUI 101, EQUI 102, EQUI 103, and EQUI 104, in pounds/day; STRU1L3A = 92-day rolling average lead emissions emitted through STRU 1 from EQUI 101, EQUI 102, EQUI 103, and EQUI 104 for the previous 92-day period, in pounds/day; EQUI101L = total lead stack emissions from EQUI 101, in pounds/day; EQUI102L = total lead stack emissions from EQUI 102, in pounds/day; EQUI103L = total lead stack emissions from EQUI 103, in pounds/day; and EQUI104L = total lead stack emissions from EQUI 104, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 1	1869	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 1 using the following equations: STRU1L = EQUI101L + EQUI102L + EQUI103L + EQUI104L STRU1L365S = (STRU1L2 + STRU1L3 + STRU1L4 +.... + STRU1L364+ STRU1L365+ STRU1L366) – STRU1L1 where: STRU1L# = daily lead emissions emitted through STRU 1 from EQUI 101, EQUI 102, EQUI 103, and EQUI 104, in pounds/day; STRU1L365S = 365-day rolling sum lead emissions emitted through STRU 1 from EQUI 101, EQUI 102, EQUI 103, and EQUI 104 for the previous 365-day period, in pounds/year; EQUI101L = total lead stack emissions from EQUI 101, in pounds/day; EQUI102L = total lead stack emissions from EQUI 102, in pounds/day; EQUI103L = total lead stack emissions from EQUI 103, in pounds/day; and EQUI104L = total lead stack emissions from EQUI 104, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 1	1871	Particulate Matter: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 11. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 1	1872	PM < 10 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 11. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 1	1873	PM < 2.5 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 11. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 1	1874	Lead: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 11. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 1	1875	Particulate Matter: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 1	1876	PM < 10 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 1	1877	PM < 2.5 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, ubd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 1	1878	Lead: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereaGer to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. (A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
STRU 1	1879	The Permittee is prohibited from releasing emissions of pollutants through STRU 1 from any emission units other than EQUI 101, EQUI 102, EQUI 103, EQUI 104, or EQUI 221 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 15	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.03887 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 15	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.03887 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 15	1862	The Permittee shall limit emissions of Lead <= 0.0230 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 15	1864	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 15 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 15 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 15	1865	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 15 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 15 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 15 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 15	1866	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 15 using the following equation: STRU15PM10 = EQUI121PM10 + EQUI122PM10 + EQUI123PM10 where: STRU15PM10 = total daily average PM10 emissions emitted through STRU 15 from EQUI 121, EQUI 122, and EQUI 123 , in pounds/hour; EQUI121PM10 = total daily average PM10 stack emissions from EQUI 121, in pounds/hour; EQUI122PM10 = total daily average PM10 stack emissions from EQUI 122, in pounds/hour; and EQUI123PM10 = total daily average PM10 stack emissions from EQUI 123, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 15	1867	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 15 using the following equation: STRU15PM2.5 = EQUI121PM2.5 + EQUI122PM2.5 + EQUI123PM2.5 where: STRU15PM2.5 = total daily average PM2.5 emissions emitted through STRU 15 from EQUI 121, EQUI 122, and EQUI 123, in pounds/hour; EQUI121PM2.5 = total daily average PM2.5 stack emissions from EQUI 121, in pounds/hour; EQUI122PM2.5 = total daily average PM2.5 stack emissions from EQUI 122, in pounds/hour; and EQUI123PM2.5 = total daily average PM2.5 stack emissions from EQUI 123, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 15	1868	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 15 using the following equations: STRU15L = EQUI121L + EQUI122L + EQUI123L STRU15L3A = [(STRU15L2 + STRU15L3 + STRU15L4 +…+ STRU15L91 + STRU15L92 + STRU15L93) – STRU15L1] / 92 days where: STRU15L# = total daily lead emissions emitted through STRU 15 from EQUI 121, EQUI 122, and EQUI 123, in pounds/day; STRU15L3A = 92-day rolling average lead emissions emitted through STRU 15 from EQUI 121, EQUI 122, and EQUI 123 for the previous 92-day period, in pounds/day; EQUI121L = total lead stack emissions from EQUI 121, in pounds/day; EQUI122L = total lead stack emissions from EQUI 122, in pounds/day; and EQUI123L = total lead stack emissions from EQUI 123, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 15	1869	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 15 using the following equations: STRU15L = EQUI121L + EQUI122L + EQUI123L STRU15L365S = (STRU15L2 + STRU15L3 + STRU15L4 +. . . + STRU15L364+ STRU15L365+ STRU15L366) – STRU15L1 where: STRU15L# = daily lead emissions emitted through STRU 15 from EQUI 121, EQUI 122, and EQUI 123, in pounds/day; STRU15L365S = 365-day rolling sum lead emissions emitted through STRU 15 from EQUI 121, EQUI 122, and EQUI 123 for the previous 365-day period, in pounds/year; EQUI121L = total lead stack emissions from EQUI 121, in pounds/day; EQUI122L = total lead stack emissions from EQUI 122, in pounds/day; and EQUI123L = total lead stack emissions from EQUI 123, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 15	1870	Particulate Matter: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, ubps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 15	1871	PM < 10 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 15	1872	PM < 2.5 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 15	1873	Lead: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
STRU 15	1875	Particulate Matter: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 15	1876	PM < 10 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 15	1877	PM < 2.5 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 15	1878	Lead: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereaGer to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. (A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 15	1879	The Permittee is prohibited from releasing emissions of pollutants through STRU 15 from any emission units other than EQUI 121, EQUI 122, or EQUI 123 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp, 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
STRU 16	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.06388 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 16	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.06388 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 16	1862	The Permittee shall limit emissions of Lead <= 0.03778 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 16	1864	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 16 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 16 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 16	1865	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 16 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 16 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 16 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 16	1866	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 16 using the following equation: STRU16PM10 = EQUI124PM10 + EQUI125PM10 + EQUI126PM10 + EQUI157PM10 where: STRU16PM10 = total daily average PM10 emissions emitted through STRU 16 from EQUI 124, EQUI 125, EQUI 126, and EQUI 157, in pounds/hour; EQUI124PM10 = total daily average PM10 stack emissions from EQUI 124, in pounds/hour; EQUI125PM10 = total daily average PM10 stack emissions from EQUI 125, in pounds/hour; EQUI126PM10 = total daily average PM10 stack emissions from EQUI 126, in pounds/hour; and EQUI157PM10 = total daily average PM10 stack emissions from EQUI 157, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 16	1867	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 16 using the following equation: STRU16PM2.5 = EQUI124PM2.5 + EQUI125PM2.5 + EQUI126PM2.5 + EQUI157PM2.5 where: STRU16PM2.5 = total daily average PM2.5 emissions emitted through STRU 16 from EQUI 124, EQUI 125, EQUI 126, and EQUI 157, in pounds/hour; EQUI124PM2.5 = total daily average PM2.5 stack emissions from EQUI 124, in pounds/hour; EQUI125PM2.5 = total daily average PM2.5 stack emissions from EQUI 125, in pounds/hour; EQUI126PM2.5 = total daily average PM2.5 stack emissions from EQUI 126, in pounds/hour; and EQUI157PM2.5 = total daily average PM2.5 stack emissions from EQUI 157, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 16	1868	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 16 using the following equations: STRU16L = EQUI124L + EQUI125L + EQUI126L + EQUI157L STRU16L3A = [(STRU16L2 + STRU16L3 + STRU16L4 +…+ STRU16L91 + STRU16L92 + STRU16L93) – STRU16L1] / 92 days where: STRU16L# = total daily lead emissions emitted through STRU 16 from EQUI 124, EQUI 125, EQUI 126, and EQUI 157, in pounds/day; STRU16L3A = 92-day rolling average lead emissions emitted through STRU 16 from EQUI 124, EQUI 125, EQUI 126, and EQUI 157 for the previous 92-day period, in pounds/day; EQUI124L = total lead stack emissions from EQUI 124, in pounds/day; EQUI125L = total lead stack emissions from EQUI 125, in pounds/day; EQUI126L = total lead stack emissions from EQUI 126, in pounds/day; and EQUI157L = total lead stack emissions from EQUI 157, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 16	1869	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 16 using the following equations: STRU16L = EQUI124L + EQUI125L + EQUI126L + EQUI157L STRU16L365S = (STRU16L2 + STRU16L3 + STRU16L4 +.... + STRU16L364 + STRU16L365 + STRU16L366) – STRU16L1 where: STRU16L# = daily lead emissions emitted through STRU 16 from EQUI 124, EQUI 125, EQUI 126, and EQUI 157, in pounds/day; STRU16L365S = 365-day rolling sum lead emissions emitted through STRU 16 from EQUI 124, EQUI 125, EQUI 126, and EQUI 157 for the previous 365-day period, in pounds/year; EQUI124L = total lead stack emissions from EQUI 124, in pounds/day; EQUI125L = total lead stack emissions from EQUI 125, in pounds/day; EQUI126L = total lead stack emissions from EQUI 126, in pounds/day; and EQUI157L = total lead stack emissions from EQUI 157, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 16	1870	Particulate Matter: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 16	1871	PM < 10 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 16	1872	PM < 2.5 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 16	1873	Lead: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
STRU 16	1875	Particulate Matter: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 16	1876	PM < 10 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 16	1877	PM < 2.5 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a) , To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 16	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 16 from any emission units other than EQUI 124, EQUI 125, EQUI 126, or EQUI 157 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp, 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
STRU 16	1878	Lead: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereaGer to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. (A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 17	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.01864 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 17	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.01864 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 17	1862	The Permittee shall limit emissions of Lead <= 0.01103 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 17	1864	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 17 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 17 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 17	1865	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 17 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 17 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 17 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 17	1866	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 17 using the following equation: STRU17PM10 = EQUI127PM10 + EQUI128PM10 + EQUI129PM10 where: STRU17PM10 = total daily average PM10 emissions emitted through STRU 17 from EQUI 127, EQUI 128, and EQUI 129, in pounds/hour; EQUI127PM10 = total daily average PM10 stack emissions from EQUI 127, in pounds/hour; EQUI128PM10 = total daily average PM10 stack emissions from EQUI 128, in pounds/hour; and EQUI129PM10 = total daily average PM10 stack emissions from EQUI 129, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 17	1867	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 17 using the following equation: STRU17PM2.5 = EQUI127PM2.5 + EQUI128PM2.5 + EQUI129PM2.5 where: STRU17PM2.5 = total daily average PM2.5 emissions emitted through STRU 17 from EQUI 127, EQUI 128, and EQUI 129, in pounds/hour; EQUI127PM2.5 = total daily average PM2.5 stack emissions from EQUI 127, in pounds/hour; EQUI128PM2.5 = total daily average PM2.5 stack emissions from EQUI 128, in pounds/hour; and EQUI129PM2.5 = total daily average PM2.5 stack emissions from EQUI 129, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 17	1868	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 17 using the following equations: STRU17L = EQUI127L + EQUI128L + EQUI129L STRU17L3A = [(STRU17L2 + STRU17L3 + STRU17L4 +…+ STRU17L91 + STRU17L92 + STRU17L93) – STRU17L1] / 92 days where: STRU17L# = total daily lead emissions emitted through STRU 17, in pounds /day; STRU17L3A = 92-day rolling average lead emissions emitted through STRU 17 for the previous 92-day period, in pounds/day; EQUI127L = total lead stack emissions from EQUI 127, in pounds/day; EQUI128L = total lead stack emissions from EQUI 128, in pounds/day; and EQUI129L = total lead stack emissions from EQUI 129, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 17	1869	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 17 using the following equations: STRU17L = EQUI127L + EQUI128L + EQUI129L STRU17L365S = (STRU17L2 + STRU17L3 + STRU17L4 +.... + STRU17L364 + STRU17L365 + STRU17L366) – STRU17L1 where: STRU17L# = daily lead emissions emitted through STRU 17, in pounds/day; STRU17L365S = 365-day rolling sum lead emissions emitted through STRU 17 for the previous 365-day period, in pounds/year; EQUI127L = total lead stack emissions from EQUI 127, in pounds/day; EQUI128L = total lead stack emissions from EQUI 128, in pounds/day; and EQUI129L = total lead stack emissions from EQUI 129, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 17	1871	PM < 10 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 17	1871	Particulate Matter: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 17	1872	PM < 2.5 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 17	1873	Lead: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
STRU 17	1875	Particulate Matter: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 17	1876	PM < 10 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 17	1877	PM < 2.5 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 17	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 17 from any emission units other than EQUI 127, EQUI 128, or EQUI 129 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 17	1878	Lead: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereaGer to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. (A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
STRU 20	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.02523 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 20	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.02523 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 20	1862	The Permittee shall limit emissions of Lead <= 0.01492 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 20	1864	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 20 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 20 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 20	1865	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 20 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 20 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 20 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 20	1866	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 20 using the following equation: STRU20PM10 = EQUI132PM10 + EQUI133PM10 where: STRU20PM10 = total daily average PM10 emissions emitted through STRU 20, in pounds/hour; EQUI132PM10 = total daily average PM10 stack emissions from EQUI 132, in pounds/hour; and EQUI133PM10 = total daily average PM10 stack emissions from EQUI 133, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 20	1867	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 20 using the following equation: STRU20PM2.5 = EQUI132PM2.5 + EQUI133PM2.5 where: STRU20PM2.5 = total daily average PM2.5 emissions emitted through STRU 20, in pounds/hour; EQUI132PM2.5 = total daily average PM2.5 stack emissions from EQUI 132, in pounds/hour; and EQUI133PM2.5 = total daily average PM2.5 stack emissions from EQUI 133, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 20	1868	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 20 using the following equations: STRU20L = EQUI132L + EQUI133L STRU20L3A = [(STRU20L2 + STRU20L3 + STRU20L4 +…+ STRU20L91 + STRU20L92 + STRU20L93) – STRU20L1] / 92 days where: STRU20L# = total daily lead emissions emitted through STRU 20, in pounds/day; STRU20L3A = 92-day rolling average lead emissions emitted through STRU 20 for the previous 92-day period, in pounds/day; EQUI132L = total lead stack emissions from EQUI 132, in pounds/day; and EQUI133L = total lead stack emissions from EQUI 133, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 20	1869	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 20 using the following equations: STRU20L = EQUI132L + EQUI133L STRU20L365S = (STRU20L2 + STRU20L3 + STRU20L4 +.... + STRU20L364 + STRU20L365 + STRU20L366) – STRU20L1 where: STRU20L# = total daily lead emissions emitted through STRU 20, in pounds/day; STRU20L365S = 365-day rolling sum lead emissions emitted through STRU 21 for the previous 365-day period, in pounds/year; EQUI132L = total lead stack emissions from EQUI 132, in pounds/day; and EQUI133L = total lead stack emissions from EQUI 133, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 20	1871	Particulate Matter: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 20	1871	PM < 10 micron: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 20	1872	PM < 2.5 micron: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 20	1873	Lead: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 20	1874	Particulate Matter: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 20	1875	PM < 10 micron: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 20	1876	PM < 2.5 micron: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 20	1877	Lead: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereaGer to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 20	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 20 from any emission units other than EQUI 132, or EQUI 133 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 23	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.02222 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 23	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.02222 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 23	1862	The Permittee shall limit emissions of Lead <= 0.01314 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 23	1864	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 23 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 23 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 23	1865	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 23 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 23 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 23 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 23	1866	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 23 using the following equation: STRU23PM10 = EQUI136PM10 where: STRU23PM10 = total daily average PM10 emissions emitted through STRU 23, in pounds/hour; and EQUI136PM10 = total daily average PM10 stack emissions from EQUI 136, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 23	1867	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 23 using the following equation: STRU23PM2.5 = EQUI136PM2.5 where: STRU23PM2.5 = total daily average PM2.5 emissions emitted through STRU 23, in pounds/hour; and EQUI136PM2.5 = total daily average PM2.5 stack emissions from EQUI 136, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 23	1868	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 23 using the following equations: STRU23L = EQUI136L STRU23L3A = [(STRU23L2 + STRU23L3 + STRU23L4 +…+ STRU23L91 + STRU23L92 + STRU23L93) – STRU23L1] / 92 days where: STRU23L# = total daily lead emissions emitted through STRU 23, in pounds/day; STRU23L3A = 92-day rolling average lead emissions emitted through STRU 23 for the previous 92-day period, in pounds/day; and EQUI136L = total lead stack emissions from EQUI 136, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 23	1869	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 23 using the following equations: STRU23L = EQUI136L STRU23L365S = (STRU23L2 + STRU23L3 + STRU23L4 +.... + STRU23L364 + STRU23L365 + STRU23L366) – STRU23L1 where: STRU23L# = total daily lead emissions emitted through STRU 23, in pounds/day; STRU23L365S = 365-day rolling average lead emissions emitted through STRU 23 for the previous 365-day period, in pounds/year; and EQUI136L = total lead stack emissions from EQUI 136, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 23	1871	Particulate Matter: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 23	1871	PM < 10 micron: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 23	1872	PM < 2.5 micron: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 23	1873	Lead: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
STRU 23	1874	Particulate Matter: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 23	1875	PM < 10 micron: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 23	1876	PM < 2.5 micron: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 23	1877	Lead: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereaGer to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
STRU 23	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 23 from any emission units other than EQUI 136 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 24	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.02202 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 24	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.02202 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 24	1862	The Permittee shall limit emissions of Lead <= 0.01302 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 24	1864	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 24 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 24 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 24	1865	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 24 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 24 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 24 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 24	1866	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 24 using the following equation: STRU24PM10 = EQUI137PM10 + EQUI138PM10 where: STRU24PM10 = total daily average PM10 emissions emitted through STRU 24, in pounds/hour; EQUI137PM10 = total daily average PM10 stack emissions from EQUI 137, in pounds/hour; and EQUI138PM10 = total daily average PM10 stack emissions from EQUI 138, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 24	1867	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 24 using the following equation: STRU24PM2.5 = EQUI137PM2.5 + EQUI138PM2.5 where: STRU24PM2.5 = total daily average PM2.5 emissions emitted through STRU 24, in pounds/hour; EQUI137PM2.5 = total daily average PM2.5 stack emissions from EQUI 137, in pounds/hour; and EQUI138PM2.5 = total daily average PM2.5 stack emissions from EQUI 138, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 24	1868	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 24 using the following equations: STRU24L = EQUI137L + EQUI138L STRU24L3A = [(STRU24L2 + STRU24L3 + STRU24L4 +…+ STRU24L91 + STRU24L92 + STRU24L93) – STRU24L1] / 92 days where: STRU24L# = total daily lead emissions emitted through STRU 24, in pounds/day; STRU24L3A = 92-day rolling average lead emissions emitted through STRU 24 for the previous 92-day period, in pounds/day; EQUI137L = total lead stack emissions from EQUI 137, in pounds/day; and EQUI138L = total lead stack emissions from EQUI 138, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 24	1869	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 24 using the following equations: STRU24L = EQUI137L + EQUI138L STRU24L365S = (STRU24L2 + STRU24L3 + STRU24L4 +.... + STRU24L364 + STRU24L365 + STRU24L366) – STRU24L1 where: STRU24L# = total daily lead emissions emitted through STRU 24, in pounds/day; STRU24L365S = 365-day rolling sum lead emissions emitted through STRU 24 for the previous 365-day period, in pounds/year; EQUI137L = total lead stack emissions from EQUI 137, in pounds/day; and EQUI138L = total lead stack emissions from EQUI 138, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 24	1871	Particulate Matter: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 24	1871	PM < 10 micron: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 24	1872	PM < 2.5 micron: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 24	1873	Lead: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 24	1874	Particulate Matter: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 24	1875	PM < 10 micron: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 24	1876	PM < 2.5 micron: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 24	1877	Lead: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereaGer to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 24	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 24 from any emission units other than EQUI 137 or EQUI 138 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 25	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.02641 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 25	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.02641 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 25	1862	The Permittee shall limit emissions of Lead <= 0.01562 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 25	1864	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 25 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 25 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 25	1865	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 25 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 25 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 25 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 25	1866	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 25 using the following equation: STRU25PM10 = EQUI139PM10 + EQUI140PM10 where: STRU25PM10 = total daily average PM10 emissions emitted through STRU 25, in pounds/hour; EQUI139PM10 = total daily average PM10 stack emissions from EQUI 139, in pounds/hour; and EQUI140PM10 = total daily average PM10 stack emissions from EQUI 140, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 25	1867	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 25 using the following equation: STRU25PM2.5 = EQUI139PM2.5 + EQUI140PM2.5 where: STRU25PM2.5 = total daily average PM2.5 emissions emitted through STRU 25, in pounds/hour; EQUI139PM2.5 = total daily average PM2.5 stack emissions from EQUI 139, in pounds/hour; and EQUI140PM2.5 = total daily average PM2.5 stack emissions from EQUI 140, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 25	1868	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 25 using the following equations: STRU25L = EQUI139L + EQUI140L STRU25L3A = [(STRU25L2 + STRU25L3 + STRU25L4 +…+ STRU25L91 + STRU25L92 + STRU25L93) – STRU25L1] / 92 days where: STRU25L# = total daily lead emissions emitted through STRU 25, in pounds/day; STRU25L3A = 92-day rolling average lead emissions emitted through STRU 25 for the previous 92-day period, in pounds/day; EQUI139L = total lead stack emissions from EQUI 139, in pounds/day; and EQUI140L = total lead stack emissions from EQUI 140, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 25	1869	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 25 using the following equations: STRU25L = EQUI139L + EQUI140L STRU25L365S = (STRU25L2 + STRU25L3 + STRU25L4 +.... + STRU25L364 + STRU25L365 + STRU25L366) – STRU25L1 where: STRU25L# = total daily lead emissions emitted through STRU 25, in pounds/day; STRU25L365S = 365-day rolling sum lead emissions emitted through STRU 25 for the previous 365-day period, in pounds/year; EQUI139L = total lead stack emissions from EQUI 139, in pounds/day; and EQUI140L = total lead stack emissions from EQUI 140, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 25	1871	Particulate Matter: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 25	1871	PM < 10 micron: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 25	1872	PM < 2.5 micron: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 25	1873	Lead: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
STRU 25	1874	Particulate Matter: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 25	1875	PM < 10 micron: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 25	1876	PM < 2.5 micron: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 25	1877	Lead: The Permittee shall conduct a performance test due before 24 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereaGer to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 25	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 25 from any emission units other than EQUI 139 or EQUI 140 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
STRU 26	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.05521 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 26	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.05521 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 26	1862	The Permittee shall limit emissions of Lead <= 0.03265 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 26	1864	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 26 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 26 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 26	1865	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 26 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 26 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 26 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 26	1866	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 26 using the following equation: STRU26PM10 = EQUI141PM10 + EQUI142PM10 + EQUI143PM10 + EQUI155PM10 where: STRU26PM10 = total daily average PM10 emissions emitted through STRU 26, in pounds/hour; EQUI141PM10 = total daily average PM10 stack emissions from EQUI 141, in pounds/hour; EQUI142PM10 = total daily average PM10 stack emissions from EQUI 142, in pounds/hour; EQUI143PM10 = total daily average PM10 stack emissions from EQUI 143, in pounds/hour; and EQUI155PM10 = total daily average PM10 stack emissions from EQUI 155, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 26	1867	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 26 using the following equation: STRU26PM2.5 = EQUI141PM2.5 + EQUI142PM2.5 + EQUI143PM2.5 + EQUI155PM2.5 where: STRU26PM2.5 = total daily average PM2.5 emissions emitted through STRU 26, in pounds/hour; EQUI141PM2.5 = total daily average PM2.5 stack emissions from EQUI 141, in pounds/hour; EQUI142PM2.5 = total daily average PM2.5 stack emissions from EQUI 142, in pounds/hour; EQUI143PM2.5 = total daily average PM2.5 stack emissions from EQUI 143, in pounds/hour; and EQUI155PM2.5 = total daily average PM2.5 stack emissions from EQUI 155, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 26	1868	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 26 using the following equations: STRU26L = EQUI141L + EQUI142L + EQUI143L + EQUI155L STRU26L3A = [(STRU26L2 + STRU26L3 + STRU26L4 +…+ STRU26L91 + STRU26L92 + STRU26L93) – STRU26L1] / 92 days where: STRU26L# = total daily lead emissions emitted through STRU 26, in pounds/day; STRU26L3A = 92-day rolling average lead emissions emitted through STRU 26 for the previous 92-day period, in pounds/day; EQUI141L = total lead stack emissions from EQUI 141, in pounds/day; EQUI142L = total lead stack emissions from EQUI 142, in pounds/day; EQUI143L = total lead stack emissions from EQUI 143, in pounds/day; and EQUI155L = total lead stack emissions from EQUI 155, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 26	1869	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 26 using the following equations: STRU26L = EQUI141L + EQUI142L + EQUI143L + EQUI155L STRU26L365S = (STRU26L2 + STRU26L3 + STRU26L4 +.... + STRU26L364 + STRU26L365 + STRU26L366) – STRU26L1 where: STRU26L# = daily lead emissions emitted through STRU 26, in pounds/day; STRU26L365S = 365-day rolling sum lead emissions emitted through STRU 26 for the previous 365-day period, in pounds/year; EQUI141L = total lead stack emissions from EQUI 142, in pounds/day; EQUI142L = total lead stack emissions from EQUI 142, in pounds/day; EQUI143L = total lead stack emissions from EQUI 143, in pounds/day; and EQUI155L = total lead stack emissions from EQUI 155, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 26	1871	Particulate Matter: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 26	1871	PM < 10 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 26	1872	PM < 2.5 micron: The Permittee shall conduct a performance test due before 180 days following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 26	1873	Lead: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
STRU 26	1874	Particulate Matter: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 26	1875	PM < 10 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 26	1876	PM < 2.5 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 26	1877	Lead: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
STRU 26	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 26 from any emission units other than EQUI 141, EQUI 142, EQUI 143, or EQUI 155 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 30	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.06048 pounds per hour daily average. [Minn. R. 7007.0800, subps. (A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 30	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.06048 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 30	1862	The Permittee shall limit emissions of Lead <= 0.03577 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 30	1864	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 30 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 30 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 30	1865	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 30 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 30 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 30 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 30	1866	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 30 using the following equation: STRU30PM10 = EQUI146PM10 + EQUI158PM10 where: STRU30PM10 = total daily average PM10 emissions emitted through STRU 30, in pounds/hour; EQUI146PM10 = total daily average PM10 stack emissions from EQUI 146, in pounds/hour; and EQUI158PM10 = total daily average PM10 stack emissions from EQUI 158, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 30	1867	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 30 using the following equation: STRU30PM2.5 = EQUI146PM2.5 + EQUI158PM2.5 where: STRU30PM2.5 = total daily average PM2.5 emissions emitted through STRU 30, in pounds/hour; EQUI146PM2.5 = total daily average PM2.5 stack emissions from EQUI 146, in pounds/hour; and EQUI158PM2.5 = total daily average PM2.5 stack emissions from EQUI 158, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 30	1868	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 30 using the following equations: STRU30L = EQUI146L + EQUI158L STRU30L3A = [(STRU30L2 + STRU30L3 + STRU30L4 +…+ STRU30L91 + STRU30L92 + STRU30L93) – STRU30L1] / 92 days where: STRU30L# = total daily lead emissions emitted through STRU 30, in pounds/day; STRU30L3A = 92-day rolling average lead emissions emitted through STRU 30 for the previous 92-day period, in pounds/day; EQUI146L = total lead stack emissions from EQUI 146, in pounds/day; and EQUI158L = total lead stack emissions from EQUI 158, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 30	1869	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 30 using the following equations: STRU30L = EQUI146L + EQUI158L STRU30L365S = (STRU30L2 + STRU30L3 + STRU30L4 +.... + STRU30L364 + STRU30L365 + STRU30L366) – STRU30L1 where: STRU30L# = total daily lead emissions emitted through STRU 30, in pounds/day; STRU30L365S = 365-day rolling sum lead emissions emitted through STRU 30 for the previous 365-day period, in pounds/year; EQUI146L = total lead stack emissions from EQUI 146, in pounds/day; and EQUI158L = total lead stack emissions from EQUI 158, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 30	1871	Particulate Matter: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 30	1871	PM < 10 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 30	1872	PM < 2.5 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 30	1873	Lead: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 30	1874	Particulate Matter: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 30	1875	PM < 10 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 30	1876	PM < 2.5 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 30	1877	Lead: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 30	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 30 from any emission units other than EQUI 146 or EQUI 158 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 31	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.02982 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 31	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.02982 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 31	1862	The Permittee shall limit emissions of Lead <= 0.01764 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 31	1864	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 31 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 31 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 31	1865	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 31 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 31 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 31 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 31	1866	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 31 using the following equation: STRU31PM10 = EQUI147PM10 where: STRU31PM10 = total daily average PM10 emissions emitted through STRU 31, in pounds/hour; and EQUI147PM10 = total daily average PM10 stack emissions from EQUI 147, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 31	1867	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 31 using the following equation: STRU31PM2.5 = EQUI147PM2.5 where: STRU31PM2.5 = total daily average PM2.5 emissions emitted through STRU 31, in pounds/hour; and EQUI147PM2.5 = total daily average PM2.5 stack emissions from EQUI 147, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 31	1868	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 31 using the following equations: STRU31L = EQUI147L STRU31L3A = [(STRU31L2 + STRU31L3 + STRU31L4 +…+ STRU31L91 + STRU31L92 + STRU31L93) – STRU31L1] / 92 days where: STRU31L# = total daily lead emissions emitted through STRU 31, in pounds/day; STRU31L3A = 92-day rolling average lead emissions emitted through STRU 31 for the previous 92-day period, in pounds/day; and EQUI147L = total lead stack emissions from EQUI 147, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 31	1869	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 31 using the following equations: STRU31L = EQUI147L STRU31L365S = (STRU31L2 + STRU31L3 + STRU31L4 +.... + STRU31L364 + STRU31L365 + STRU31L366) – STRU31L1 where: STRU31L# = total daily lead emissions emitted through STRU 31, in pounds/day; STRU31L365S = 365-day rolling sum lead emissions emitted through STRU 31 for the previous 365-day period, in pounds/year; and EQUI147L = total lead stack emissions from EQUI 147, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 31	1871	Particulate Matter: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 31	1871	PM < 10 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 31	1872	PM < 2.5 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 31	1873	Lead: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
STRU 31	1874	Particulate Matter: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 31	1875	PM < 10 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 31	1876	PM < 2.5 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 31	1877	Lead: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 31	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 31 from any emission units other than EQUI 147 obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
STRU 32	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.03007 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 32	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.03007 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 32	1862	The Permittee shall limit emissions of Lead <= 0.01788 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 32	1864	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 32 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 32 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 32	1865	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 32 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 32 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 32 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 32	1866	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 32 using the following equation: STRU32PM10 = EQUI149PM10 + EQUI150PM10 where: STRU32PM10 = total daily average PM10 emissions emitted through STRU 32, in pounds/hour; EQUI149PM10 = total daily average PM10 stack emissions from EQUI 149, in pounds/hour; and EQUI150PM10 = total daily average PM10 stack emissions from EQUI 150, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 32	1867	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 32 using the following equation: STRU32PM2.5 = EQUI149PM2.5 + EQUI150PM2.5 where: STRU32PM2.5 = total daily average PM2.5 emissions emitted through STRU 32, in pounds/hour; EQUI149PM2.5 = total daily average PM2.5 stack emissions from EQUI 149, in pounds/hour; and EQUI150PM2.5 = total daily average PM2.5 stack emissions from EQUI 150, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 32	1868	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 32 using the following equations: STRU32L = EQUI146L + EQUI158L STRU32L3A = [(STRU32L2 + STRU32L3 + STRU32L4 +…+ STRU32L91 + STRU32L92 + STRU32L93) – STRU32L1] / 92 days where: STRU32L# = total daily lead emissions emitted through STRU 32, in pounds/day; STRU32L3A = 92-day rolling average lead emissions emitted through STRU 32 for the previous 92-day period, in pounds/day; EQUI149L = total lead stack emissions from EQUI 149, in pounds/day; and EQUI150L = total lead stack emissions from EQUI 150, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 32	1869	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 32 using the following equations: STRU32L = EQUI149L + EQUI150L STRU32L365S = (STRU32L2 + STRU32L3 + STRU32L4 +.... + STRU32L364 + STRU32L365 + STRU32L366) – STRU32L1 where: STRU32L# = total daily lead emissions emitted through STRU 32, in pounds/day; STRU32L365S = 365-day rolling sum lead emissions emitted through STRU 32 for the previous 365-day period, in pounds/year; EQUI149L = total lead stack emissions from EQUI 149, in pounds/day; and EQUI150L = total lead stack emissions from EQUI 150, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 32	1871	Particulate Matter: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 32	1871	PM < 10 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 32	1872	PM < 2.5 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 32	1873	Lead: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 32	1874	Particulate Matter: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 32	1875	PM < 10 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 32	1876	PM < 2.5 micron: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 32	1877	Lead: The Permittee shall conduct a performance test due before 36 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 32	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 32 from any emission units other than EQUI 149 or EQUI 150 obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 33	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.05370 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 33	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.05370 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 33	1862	The Permittee shall limit emissions of Lead <= 0.03176 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 33	1864	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 33 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 33 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 33	1865	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 33 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 33 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 33 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 33	1866	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 33 using the following equation: STRU33PM10 = EQUI152PM10 + EQUI156PM10 where: STRU33PM10 = total daily average PM10 emissions emitted through STRU 33, in pounds/hour; EQUI152PM10 = total daily average PM10 stack emissions from EQUI 152, in pounds/hour; and EQUI156PM10 = total daily average PM10 stack emissions from EQUI 156, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 33	1867	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 33 using the following equation: STRU33PM2.5 = EQUI152PM2.5 + EQUI156PM2.5 where: STRU33PM2.5 = total daily average PM2.5 emissions emitted through STRU 33, in pounds/hour; EQUI152PM2.5 = total daily average PM2.5 stack emissions from EQUI 152, in pounds/hour; and EQUI156PM2.5 = total daily average PM2.5 stack emissions from EQUI 156, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 33	1868	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 33 the following equations: STRU33L = EQUI152L + EQUI156L STRU33L3A = [(STRU33L2 + STRU33L3 + STRU33L4 +…+ STRU33L91 + STRU33L92 + STRU33L93) – STRU33L1] / 92 days where: STRU33L# = total daily lead emissions emitted through STRU 33, in pounds/day; STRU33L3A = 92-day rolling average lead emissions emitted through STRU 33 for the previous 92-day period, in pounds/day; EQUI152L = total lead stack emissions from EQUI 152, in pounds/day; and EQUI156L = total lead stack emissions from EQUI 156, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 33	1869	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 33 using the following equations: STRU33L = EQUI152L + EQUI156L STRU33L365S = (STRU33L2 + STRU33L3 + STRU33L4 +.... + STRU33L364 + STRU33L365 + STRU33L366) – STRU33L1 where: STRU33L# = total daily lead emissions emitted through STRU 33, in pounds/day; STRU33L365S = 365-day rolling sum lead emissions emitted through STRU 33 for the previous 365-day period, in pounds/year; EQUI152L = total lead stack emissions from EQUI 152, in pounds/day; and EQUI156L = total lead stack emissions from EQUI 156, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 33	1871	Particulate Matter: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 33	1871	PM < 10 micron: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 33	1872	PM < 2.5 micron: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 33	1873	Lead: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
STRU 33	1874	Particulate Matter: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 33	1875	PM < 10 micron: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 33	1876	PM < 2.5 micron: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 33	1877	Lead: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereaGer to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, sund. 4a(a)]

SI Id	Sequence	Requirement
STRU 33	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 33 from any emission units other than EQUI 152 or EQUI 156 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 34	1860	The Permittee must limit emissions of PM < 10 micron <= 0.05749 pounds per hour daily average. [Minn. R. 7007.0080, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 34	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.05749 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 34	1862	The Permittee shall limit emissions of Lead <= 0.03400 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 34	1864	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 34 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 34 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 34	1865	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 34 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 34 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 34 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 34	1866	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 34 using the following equation: STRU34PM10 = EQUI153PM10 + EQUI154PM10 where: STRU34PM10 = total daily average PM10 emissions emitted through STRU 34, in pounds/hour; EQUI153PM10 = total daily average PM10 stack emissions from EQUI 153, in pounds/hour; and EQUI154PM10 = total daily average PM10 stack emissions from EQUI 154, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 34	1867	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions STRU 34 using the following equation: STRU34PM2.5 = EQUI153PM2.5 + EQUI154PM2.5 where: STRU34PM2.5 = total daily average PM2.5 emissions emitted through STRU 34, in pounds/hour; EQUI153PM2.5 = total daily average PM2.5 stack emissions from EQUI 153, in pounds/hour; and EQUI154PM2.5 = total daily average PM2.5 stack emissions from EQUI 154, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 34	1868	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 34 using the following equations: STRU34L = EQUI153L + EQUI154L STRU34L3A = [(STRU34L2 + STRU34L3 + STRU34L4 +…+ STRU34L91 + STRU34L92 + STRU34L93) – STRU34L1] / 92 days where: STRU34L# = total daily lead emissions emitted through STRU 34, in pounds/day; STRU34L3A = 92-day rolling average lead emissions emitted through STRU 34 for the previous 92-day period, in pounds/day; EQUI153L = total lead stack emissions from EQUI 153, in pounds/day; and EQUI154L = total lead stack emissions from EQUI 154, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 34	1869	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 34 using the following equations: STRU34L = EQUI153L + EQUI154L STRU34L365S = (STRU34L2 + STRU34L3 + STRU34L4 +.... + STRU34L364 + STRU34L365 + STRU34L366) – STRU34L1 where: STRU34L# = total daily lead emissions emitted through STRU 34, in pounds/day; STRU34L365S = 365-day rolling sum lead emissions emitted through STRU 34 for the previous 365-day period, in pounds/year; EQUI153L = total lead stack emissions from EQUI 153, in pounds/day; and EQUI154L = total lead stack emissions from EQUI 154, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 34	1871	Particulate Matter: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 34	1871	PM < 10 micron: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 34	1872	PM < 2.5 micron: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 34	1873	Lead: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 34	1874	Particulate Matter: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 34	1875	PM < 10 micron: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 34	1876	PM < 2.5 micron: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 34	1877	Lead: The Permittee shall conduct a performance test due before 48 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereaGer to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, sund. 4a(a)]
STRU 34	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 34 from any emission units other than EQUI 153 or EQUI 154 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 35	1860	The Permittee must limit emissions of PM < 10 micron <= 0.01710 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 35	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.01710 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 35	1862	The Permittee shall limit emissions of Lead <= 0.01059 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 35	1863	The Permittee shall limit emissions of Lead <= 0.9412 pounds per year 365-day rolling sum. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 35	1864	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 35 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 35 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 35	1865	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 35 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 35 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 35 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 35	1866	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 35 using the following equation: STRU35PM10 = EQUI117PM10 + EQUI160PM10 where: STRU35PM10 = total daily average PM10 emissions emitted through STRU 35, in pounds/hour; and EQUI117PM10 = total daily average PM10 stack emissions from EQUI 117, in pounds/hour; EQUI160PM10 = total daily average PM10 stack emissions from EQUI 160, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 35	1867	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU35 using the following equation: STRU35PM2.5 = EQUI117PM2.5 + EQUI160PM2.5 where: STRU35PM2.5 = total daily average PM2.5 emissions emitted through STRU 35, in pounds/hour; EQUI117PM2.5 = total daily average PM2.5 stack emissions from EQUI 117, in pounds/hour; and EQUI160PM2.5 = total daily average PM2.5 stack emissions from EQUI 160, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 35	1868	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU35 the following equations: STRU35L = EQUI160L STRU35L3A = [(STRU35L2 + STRU35L3 + STRU35L4 +…+ STRU35L91 + STRU35L92 + STRU35L93) – STRU35L1] / 92 days where: STRU35L# = total daily lead emissions emitted through STRU 35, in pounds/day; STRU35L3A = 92-day rolling average lead emissions emitted through STRU 35 for the previous 92-day period, in pounds/day; and EQUI160L = total lead stack emissions from EQUI 160, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 35	1869	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 35 using the following equations: STRU35L = EQUI160L STRU35L365S = (STRU35L2 + STRU35L3 + STRU35L4 +.... + STRU35L364 + STRU35L365 + STRU35L366) – STRU35L1 where: STRU35L# = total daily lead emissions emitted through STRU 35, in pounds/day; STRU35L365S = 365-day rolling sum lead emissions emitted through STRU 35 for the previous 365-day period, in pounds/year; and EQUI160L = total lead stack emissions from EQUI 160, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 35	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 35 from any emission units other than EQUI 117 or EQUI 160 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
STRU 41	1861	The Permittee shall limit emissions of 1,2-(trans-) Dichloroethylene <= 0.0010 pounds per hour 3-hour average. This emission rate represents uncontrolled emission rates used in modeling and AERA analysis. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)& 9(2), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 41	1861	The Permittee shall limit emissions of Trichloroethylene (TCE) <= 0.00006 pounds per hour from EQUI 167. This emission rate represents uncontrolled emission rates used in modeling and AERA analysis. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)& 9(2), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 41	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 41 from any emission units other than EQUI 167 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. (A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 43	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.01896 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 43	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.01896 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 43	1862	The Permittee shall limit emissions of Lead <= 0.01488 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 43	1864	The Permittee shall limit emissions of Nitrogen Oxides <= 0.1826 pounds per hour 1-hour average This is the emission rate used in modeling and it represents the contributions from EQUI 106 and 109. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 43	1865	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 43 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 43 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 43	1866	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 43 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 43 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual die casting lead emissions from STRU 43 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 43	1867	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 43 using the following equation: STRU43PM10 = EQUI124FPM10 + 0.014 + 0.00021 where: STRU43PM10 = total daily average PM10 emissions emitted through STRU 43, in pounds/hour; and EQUI124FPM10 = total daily average uncaptured PM10 emissions from EQUI 124, in pounds/hour 0.014 = total daily average PM10 emission contribution from EQUI106 and EQUI109, in pounds/hr; and 0.00021 = total daily average PM10 emission contribution from EQUI115, in pounds/hr. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 43	1868	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 43 using the following equation: STRU43PM2.5 = EQUI124FPM2.5 + 0.014 + 0.00021 where: STRU43PM2.5 = total daily average PM2.5 emissions emitted through STRU 43, in pounds/hour; and EQUI124FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 124, in pounds/hour. 0.014 = total daily average PM2.5 emission contribution from EQUI106 and EQUI109, in pounds/hr; and 0.00021 = total daily average PM2.5 emission contribution from EQUI115, in pounds/hr. [Minn. R. 7007.0800, subps. 4-5]
STRU 43	1869	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 43 using the following equations: STRU43L = EQUI124FL + 0.00011 STRU43L3A = [(STRU43L2 + STRU43L3 + STRU43L4 + . . . + STRU43L91 + STRU43L92 + STRU43L93) – STRU43L1] / 92 days where: STRU43L# = total daily lead emissions emitted through STRU 43, in pounds/day; STRU43L3A = 92-day rolling average lead emissions emitted through STRU 43 for the previous 92-day period, in pounds/day; EQUI124FL = total uncaptured lead emissions from EQUI 124, in pounds/day; and 0.00011 = lead emission contribution from EQUI115, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 43	1870	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 43 using the following equations: STRU43L = EQUI124FL STRU43L365S = (STRU43L2 + STRU43L3 + STRU43L4 + . . . + STRU43L364 + STRU43L365 + STRU43L366) – STRU43L1 where: STRU43L# = total daily lead emissions emitted through STRU 43, in pounds/day; STRU43L365S = 365-day rolling sum lead emissions emitted through STRU 43 for the previous 365-day period, in pounds/year; and EQUI124FL = total uncaptured lead emissions from EQUI 124, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 43	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 43 from any emission units other than EQUI 106, EQUI 109, EQUI 115, and EQUI 124 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 44	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.07081 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 44	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.07081 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 44	1862	The Permittee shall limit emissions of Lead <= 0.01061 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
STRU 44	1864	The Permittee shall limit emissions of Nitrogen Oxides <= 0.4070 pounds per hour 1-hour average This is the emission rate used in modeling and it represents the contributions from EQUI 107, EQUI 108 and EQUI 111. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 44	1865	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 44 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 44 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 44	1866	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 44 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 44 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual die casting lead emissions from STRU 44 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 44	1867	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 44 using the following equation: STRU44PM10 = EQUI130FPM10 + EQUI131FPM10 + EQUI132FPM10 + EQUI133FPM10 + EQUI134FPM10 + EQUI135FPM10 + EQUI136FPM10+ 0.03093 where: STRU44PM10 = total daily average PM10 emissions emitted through STRU 44, in pounds/hour; EQUI130FPM10 = total daily average uncaptured PM10 emissions from EQUI 130, in pounds/hour; EQUI131FPM10 = total daily average uncaptured PM10 emissions from EQUI 131, in pounds/hour; EQUI132FPM10 = total daily average uncaptured PM10 emissions from EQUI 132, in pounds/hour; EQUI133FPM10 = total daily average uncaptured PM10 emissions from EQUI 133, in pounds/hour; EQUI134FPM10 = total daily average uncaptured PM10 emissions from EQUI 134, in pounds/hour; EQUI135FPM10 = total daily average uncaptured PM10 emissions from EQUI 135, in pounds/hour; EQUI136FPM10 = total daily average uncaptured PM10 emissions from EQUI 136, in pounds/hour; and 0.03093 = total daily average PM10 emission contribution from EQUI 107, EQUI 108 and EQUI 111, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 44	1868	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 44 using the following equation: STRU44PM2.5 = EQUI130FPM2.5 + EQUI131FPM2.5 + EQUI132FPM2.5 + EQUI133FPM2.5 + EQUI134FPM2.5 + EQUI135FPM2.5 + EQUI136FPM2.5+ 0.03093 where: STRU44PM2.5 = total daily average PM2.5 emissions emitted through STRU 44, in pounds/hour; EQUI130FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 130, in pounds/hour; EQUI131FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 131, in pounds/hour; EQUI132FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 132, in pounds/hour; EQUI133FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 133, in pounds/hour; EQUI134FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 134, in pounds/hour; EQUI135FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 135, in pounds/hour; EQUI136FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 136, in pounds/hour; and 0.03093 = total daily average PM2.5 emission contribution from EQUI 107, EQUI 108 and EQUI 111, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 44	1869	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 44 using the following equations: STRU44L = EQUI130FL + EQUI131FL + EQUI132FL + EQUI133FL + EQUI134FL + EQUI135FL + EQUI136FL STRU44L3A = [(STRU44L2 + STRU44L3 + STRU44L4 + . . . + STRU44L91 + STRU44L92 + STRU44L93) – STRU44L1] / 92 days where: STRU44L# = total daily lead emissions emitted through STRU 44, in pounds/day; STRU44L3A = 92-day rolling average lead emissions emitted through STRU 44 for the previous 92-day period, in pounds/day; EQUI130FL = total uncaptured lead emissions from EQUI 130, in pounds/day; EQUI131FL = total uncaptured lead emissions from EQUI 131, in pounds/day; EQUI132FL = total uncaptured lead emissions from EQUI 132, in pounds/day; EQUI133FL = total uncaptured lead emissions from EQUI 133, in pounds/day; EQUI134FL = total uncaptured lead emissions from EQUI 134, in pounds/day; EQUI135FL = total uncaptured lead emissions from EQUI 135, in pounds/day; and EQUI136FL = total uncaptured lead emissions from EQUI 136, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 44	1870	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 44 using the following equations: STRU44L = EQUI130FL + EQUI131FL + EQUI132FL + EQUI133FL + EQUI134FL + EQUI135FL + EQUI136FL STRU44L365S = (STRU44L2 + STRU44L3 + STRU44L4 + . . . +STRU44L364 + STRU44L365 + STRU44L366) – STRU44L1 where: STRU44L# = total daily lead emissions emitted through STRU 44, in pounds/day; STRU44L365S = 365-day rolling sum lead emissions emitted through STRU 44 for the previous 365-day period, in pounds/year; EQUI130FL = total uncaptured lead emissions from EQUI 130, in pounds/day; EQUI131FL = total uncaptured lead emissions from EQUI 131, in pounds/day; EQUI132FL = total uncaptured lead emissions from EQUI 132, in pounds/day; EQUI133FL = total uncaptured lead emissions from EQUI 133, in pounds/day; EQUI134FL = total uncaptured lead emissions from EQUI 134, in pounds/day; EQUI135FL = total uncaptured lead emissions from EQUI 135, in pounds/day; and EQUI136FL = total uncaptured lead emissions from EQUI 136, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 44	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 44 from any emission units other than EQUI 107, EQUI 108, EQUI 111, EQUI 130, EQUI 131, EQUI 132, EQUI 133, EQUI 134, EQUI 135, or EQUI 136 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 45	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.05712 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 45	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.05712 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 45	1862	The Permittee shall limit emissions of Lead <= 0.006982 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 45	1864	The Permittee shall limit emissions of Nitrogen Oxides <= 0.4069 pounds per hour 1-hour average This is the emission rate used in modeling and it represents the contributions from EQUI 107, EQUI 108 and EQUI 111. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
STRU 45	1865	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 45 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 45 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 45	1866	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 45 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 45 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual die casting lead emissions from STRU 45 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 45	1867	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 45 using the following equation: STRU45PM10 = EQUI137FPM10 + EQUI138FPM10 + EQUI139FPM10 + EQUI140FPM10 + EQUI141FPM10+ 0.03093 where: STRU45PM10 = total daily average PM10 emissions emitted through STRU 45, in pounds/hour; EQUI137FPM10 = total daily average uncaptured PM10 emissions from EQUI 137, in pounds/hour; EQUI138FPM10 = total daily average uncaptured PM10 emissions from EQUI 138, in pounds/hour; EQUI139FPM10 = total daily average uncaptured PM10 emissions from EQUI 139, in pounds/hour; EQUI140FPM10 = total daily average uncaptured PM10 emissions from EQUI 140, in pounds/hour; EQUI141FPM10 = total daily average uncaptured PM10 emissions from EQUI 141, in pounds/hour; and 0.0303 = total daily average PM10 emission contribution from EQUI 107, EQUI 108 and EQUI 111, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 45	1868	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 45 using the following equation: STRU45PM2.5 = EQUI137FPM2.5 + EQUI138FPM2.5 + EQUI139FPM2.5 + EQUI140FPM2.5 + EQUI141FPM2.5+ 0.03093 where: STRU45PM2.5 = total daily average PM2.5 emissions emitted through STRU 45, in pounds/hour; EQUI137FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 137, in pounds/hour; EQUI138FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 138, in pounds/hour; EQUI139FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 139, in pounds/hour; EQUI140FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 140, in pounds/hour; EQUI141FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 141, in pounds/hour; 0.03093 = total daily average PM2.5 emission contribution from EQUI 107, EQUI 108 and EQUI 111, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 45	1869	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 45 using the following equations: STRU45L = EQUI137FL + EQUI138FL + EQUI139FL + EQUI140FL + EQUI141FL STRU45L3A = [(STRU45L2 + STRU45L3 + STRU45L4 +...+ STRU45L91 + STRU45L92 + STRU45L93) – STRU45L1] / 92 days where: STRU45L# = total daily lead emissions emitted through STRU 45, in pounds/day; STRU45L3A = 92-day rolling average lead emissions emitted through STRU 45 for the previous 92-day period, in pounds/day; EQUI137FL = total uncaptured lead emissions from EQUI 137, in pounds/day; EQUI138FL = total uncaptured lead emissions from EQUI 138, in pounds/day; EQUI139FL = total uncaptured lead emissions from EQUI 139, in pounds/day; EQUI140FL = total uncaptured lead emissions from EQUI 140, in pounds/day; and EQUI141FL = total uncaptured lead emissions from EQUI 141, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 45	1870	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 45 using the following equations: STRU45L = EQUI137FL + EQUI138FL + EQUI139FL + EQUI140FL + EQUI141FL STRU45L365S = (STRU45L2 + STRU45L3 + STRU45L4 +...+ STRU45L364 + STRU45L365 + STRU45L366) – STRU45L1 where: STRU45L# = total daily lead emissions emitted through STRU 45, in pounds /day; STRU45L365S = 365-day rolling sum lead emissions emitted through STRU 45 for the previous 365-day period, in pounds/year; EQUI137FL = total uncaptured lead emissions from EQUI 137, in pounds/day; EQUI138FL = total uncaptured lead emissions from EQUI 138, in pounds/day; EQUI139FL = total uncaptured lead emissions from EQUI 139, in pounds/day; EQUI140FL = total uncaptured lead emissions from EQUI 140, in pounds/day; and EQUI141FL = total uncaptured lead emissions from EQUI 141, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 45	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 45 from any emission units other than EQUI 107, EQUI 108, EQUI 111, EQUI 137, EQUI 138, EQUI 139, EQUI 140 or EQUI 141 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 46	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.04535 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 46	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.04535 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 46	1862	The Permittee shall limit emissions of Lead <= 0.003868 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 46	1864	The Permittee shall limit emissions of Nitrogen Oxides <= 0.4070 pounds per hour 1-hour average This is the emission rate used in modeling and it represents the contributions from EQUI 107, EQUI 108 and EQUI 111. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
STRU 46	1865	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 46 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 46 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 46	1866	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 46 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 46 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual die casting lead emissions from STRU 46 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 46	1867	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 46 using the following equation: STRU46PM10 = EQUI142FPM10 + EQUI143FPM10 + EQUI155FPM10 + 0.03093 where: STRU46PM10 = total daily average PM10 emissions emitted through STRU 46, in pounds/hour; EQUI142FPM10 = total daily average uncaptured PM10 emissions from EQUI 142, in pounds/hour; EQUI143FPM10 = total daily average uncaptured PM10 emissions from EQUI 143, in pounds/hour; EQUI155FPM10 = total daily average uncaptured PM10 emissions from EQUI 155, in pounds/hour; and 0.03093 = total daily average PM10 emission contribution from EQUI 107, EQUI 108 and EQUI 111, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 46	1868	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 46 using the following equation: STRU46PM2.5 = EQUI142FPM2.5 + EQUI143FPM2.5 + EQUI155FPM2.5+ 0.03093 where: STRU46PM2.5 = total daily average PM2.5 emissions emitted through STRU 46, in pounds/hour; EQUI142FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 142, in pounds/hour; EQUI143FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 143, in pounds/hour; EQUI155FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 155, in pounds/hour; and 0.03093 = total daily average PM2.5 emission contribution from EQUI 107, EQUI 108 and EQUI 111, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 46	1869	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 46 using the following equations: STRU46L = EQUI142FL + EQUI143FL + EQUI155FL STRU46L3A = [(STRU46L2 + STRU46L3 + STRU46L4 +...+ STRU46L91 + STRU46L92 + STRU46L93) – STRU46L1] / 92 days where: STRU46L# = total daily lead emissions emitted through STRU 46, in pounds/day; STRU46L3A = 92-day rolling average lead emissions emitted through STRU 46 for the previous 92-day period, in pounds/day; EQUI142FL = total uncaptured lead emissions from EQUI 142, in pounds/day; EQUI143FL = total uncaptured lead emissions from EQUI 143, in pounds/day; and EQUI155FL = total uncaptured lead emissions from EQUI 155, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 46	1870	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 46 using the following equations: STRU46L = EQUI142FL + EQUI143FL + EQUI155FL STRU46L365S = (STRU46L2 + STRU46L3 + STRU46L4 +...+ STRU46L364 + STRU46L365 + STRU46L366) – STRU46L1 where: STRU46L# = total daily lead emissions emitted through STRU 46, in pounds/day; STRU46L365S = 365-day rolling sum lead emissions emitted through STRU 46 for the previous 365-day period, in pounds/year; EQUI142FL = total uncaptured lead emissions from EQUI 142, in pounds/day; EQUI143FL = total uncaptured lead emissions from EQUI 143, in pounds/day; and EQUI155FL = total uncaptured lead emissions from EQUI 155, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 46	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 46 from any emission units other than EQUI 107, EQUI 108, EQUI 111, EQUI 142, EQUI 143, or EQUI 155 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) &(B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 47	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.02241 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 47	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.02241 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 47	1862	The Permittee shall limit emissions of Lead <= 0.001958 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 47	1864	The Permittee shall limit emissions of Nitrogen Oxides <= 0.1987 pounds per hour 1-hour average This is the emission rate used in modeling and it represents the contributions from EQUI 106 and EQUI 108. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 47	1865	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 47 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 47 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 47	1866	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 47 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 47 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual die casting lead emissions from STRU 47 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 47	1867	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 47 using the following equation: STRU47PM10 = EQUI127FPM10 + EQUI128FPM10 + EQUI129FPM10 + 0.01510 where: STRU47PM10 = total daily average PM10 emissions emitted through STRU 47, in pounds/hour; EQUI127FPM10 = total daily average uncaptured PM10 emissions from EQUI 127, in pounds/hour; EQUI128FPM10 = total daily average uncaptured PM10 emissions from EQUI 128, in pounds/hour; EQUI129FPM10 = total daily average uncapturedPM10 emissions from EQUI 129, in pounds/hour; and 0.01510 = total daily average PM10 emission contribution from EQUI 106 and EQUI 108, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 47	1868	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 47 using the following equation: STRU47PM2.5 = EQUI127FPM2.5 + EQUI128FPM2.5 + EQUI129FPM2.5 + 0.01510 where: STRU47PM2.5 = total daily average PM2.5 emissions emitted through STRU 47, in pounds/hour; EQUI127FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 127, in pounds/hour; EQUI128FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 128, in pounds/hour; EQUI129FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 129, in pounds/hour; and 0.01510 = total daily average PM2.5 emission contribution from EQUI 106 and EQUI 108, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 47	1869	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 47 using the following equations: STRU47L = EQUI127FL + EQUI128FL + EQUI129FL STRU47L3A = [(STRU47L2 + STRU47L3 + STRU47L4 +...+ STRU47L91 + STRU47L92 + STRU47L93) – STRU47L1] / 92 days where: STRU47L# = total daily lead emissions emitted through STRU 47, in pounds/day; STRU47L3A = 92-day rolling average lead emissions emitted through STRU 47 for the previous 92-day period, in pounds/day; EQUI127FL = total uncaptured lead emissions from EQUI 127, in pounds/day; EQUI128FL = total uncaptured lead emissions from EQUI 128, in pounds/day; and EQUI129FL = total uncaptured lead emissions from EQUI 129, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 47	1870	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 47 using the following equations: STRU47L = EQUI127FL + EQUI128FL + EQUI129FL STRU47L365S = (STRU47L2 + STRU47L3 + STRU47L4 +...+ STRU47L364 + STRU47L365 + STRU47L366) – STRU47L1 where: STRU47L# = total daily lead emissions emitted through STRU 47, in pounds/day; STRU47L365S = 365-day rolling sum lead emissions emitted through STRU 47 for the previous 365-day period, in pounds/year; EQUI127FL = total uncaptured lead emissions from EQUI 127, in pounds/day; EQUI128FL = total uncaptured lead emissions from EQUI 128, in pounds/day; and EQUI129FL = total uncaptured lead emissions from EQUI 129, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 47	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 47 from any emission units other than EQUI 106, EQUI 108, EQUI 127, EQUI 128, or EQUI 129 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 48	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.02520 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 48	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.02520 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 48	1862	The Permittee shall limit emissions of Lead <= 0.003020 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 48	1864	The Permittee shall limit emissions of Nitrogen Oxides <= 0.1826 pounds per hour 1-hour average This is the emission rate used in modeling and it represents the contributions from EQUI 106 and EQUI 109. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 48	1865	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 48 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 48 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 48	1866	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 48 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 48 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual die casting lead emissions from STRU 48 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 48	1867	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 48 using the following equation: STRU48PM10 = EQUI121FPM10 + EQUI122FPM10 + 0.01338 where: STRU48PM10 = total daily average PM10 emissions emitted through STRU 48, in pounds/hour; EQUI121FPM10 = total daily average uncaptured PM10 emissions from EQUI 121, in pounds/hour; EQUI122FPM10 = total daily average uncaptured PM10 emissions from EQUI 122, in pounds/hour; and 0.01338 = total daily average PM10 emission contribution from EQUI 106 and EQUI 109, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 48	1868	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 48 using the following equation: STRU48PM2.5 = EQUI121FPM2.5 + EQUI122FPM2.5 + 0.01338 where: STRU48PM2.5 = total daily average PM2.5 emissions emitted through STRU 48, in pounds/hour; EQUI121FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 121, in pounds/hour; EQUI122FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 122, in pounds/hour; and 0.01338 = total daily average PM2.5 emission contribution from EQUI 106 and EQUI 109, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 48	1869	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 48 using the following equations: STRU48L = EQUI121FL + EQUI122FL STRU48L3A = [(STRU48L2 + STRU48L3 + STRU48L4 +...+ STRU48L91 + STRU48L92 + STRU48L93) – STRU48L1] / 92 days where: STRU48L# = total daily lead emissions emitted through STRU 48, in pounds/day; STRU48L3A = 92-day rolling average lead emissions emitted through STRU 48 for the previous 92-day period, in pounds/day; EQUI121FL = total uncaptured lead emissions from EQUI 121, in pounds/day; and EQUI122FL = total uncaptured lead emissions from EQUI 122, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 48	1870	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 48 using the following equations: STRU48L = EQUI121FL + EQUI122FL STRU48L365S = (STRU48L2 + STRU48L3 + STRU48L4 +...+ STRU48L364 + STRU48L365 + STRU48L366) – STRU48L1 where: STRU48L# = total daily lead emissions emitted through STRU 48, in pounds/day; STRU48L365S = 365-day rolling sum lead emissions emitted through STRU 48 for the previous 365-day period, in pounds/year; EQUI121FL = total uncaptured lead emissions from EQUI 121, in pounds/day; and EQUI122FL = total uncaptured lead emissions from EQUI 122, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 48	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 48 from any emission units other than EQUI 106, EQUI 109, EQUI 121 or EQUI 122 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 49	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.01779 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 49	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.01779 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 49	1862	The Permittee shall limit emissions of Lead <= 0.001057 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 49	1864	The Permittee shall limit emissions of Nitrogen Oxides <= 0.1823 pounds per hour 1-hour average This is the emission rate used in modeling and it represents the contributions from EQUI 106 and EQUI 109. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 49	1865	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 49 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 49 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 49	1866	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 49 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 49 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual die casting lead emissions from STRU 49 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 49	1867	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 49 using the following equation: STRU49PM10 = EQUI123FPM10 + 0.01338 where: STRU49PM10 = total daily average PM10 emissions emitted through STRU 49, in pounds/hour; EQUI123FPM10 = total daily average uncaptured PM10 emissions from EQUI 123, in pounds/hour; and 0.01338 = total daily average PM10 emission contribution from EQUI 106 and EQUI 109, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 49	1868	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 49 using the following equation: STRU49PM2.5 = EQUI123FPM2.5 + 0.01338 where: STRU49PM2.5 = total daily average PM2.5 emissions emitted through STRU 49, in pounds/hour; EQUI123FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 123, in pounds/hour; and 0.01338 = total daily average PM2.5 emission contribution from EQUI 106 and EQUI 109, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 49	1869	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 49 using the following equations: STRU49L = EQUI123FL STRU49L3A = [(STRU49L2 + STRU49L3 + STRU49L4 +...+ STRU49L91 + STRU49L92 + STRU49L93) – STRU49L1] / 92 days where: STRU49L# = total daily lead emissions emitted through STRU 49, in pounds/day; STRU49L3A = 92-day rolling average lead emissions emitted through STRU 49 for the previous 92-day period, in pounds/day; and EQUI123FL = total uncaptured lead emissions from EQUI 123, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 49	1870	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 49 using the following equations: STRU49L = EQUI123FL STRU49L365S = (STRU49L2 + STRU49L3 + STRU49L4 +...+ STRU49L364 + STRU49L365 + STRU49L366) – STRU49L1 where: STRU49L# = total daily lead emissions emitted through STRU 49, in pounds/day; STRU49L365S = 365-day rolling sum lead emissions emitted through STRU 49 for the previous 365-day period, in pounds/year; and EQUI123FL = total uncaptured lead emissions from EQUI 123, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 49	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 49 from any emission units other than EQUI 106, EQUI 109 or EQUI 123 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 50	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.01688 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 50	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.01688 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 50	1862	The Permittee shall limit emissions of Lead <= 0.002092 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 50	1864	The Permittee shall limit emissions of Nitrogen Oxides <= 0.1213 pounds per hour 1-hour average This is the emission rate used in modeling and it represents the contributions from EQUI 109. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 50	1865	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 50 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 50 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 50	1866	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 50 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 50 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual die casting lead emissions from STRU 50 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 50	1867	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 50 using the following equation: STRU50PM10 = EQUI125FPM10 + EQUI126FPM10 + 0.00922 + 0.00021 where: STRU50PM10 = total daily average PM10 emissions emitted through STRU 50, in pounds/hour; EQUI125FPM10 = total daily average uncaptured PM10 emissions from EQUI 125, in pounds/hour; EQUI126FPM10 = total daily average uncaptured PM10 emissions from EQUI 126, in pounds/hour; 0.00922 = total daily average PM10 emission contribution from EQUI 109, in pounds/hour; and 0.00021 = PM10 emission contribution from EQUI115, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 50	1868	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 50 using the following equation: STRU50PM2.5 = EQUI125FPM2.5 + EQUI126FPM2.5 + 0.00922 + 0.00021 where: STRU50PM2.5 = total daily average PM2.5 emissions emitted through STRU 50, in pounds/hour; EQUI125FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 125, in pounds/hour; EQUI126FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 126, in pounds/hour; 0.00922 = total daily average PM2.5 emission contribution from EQUI 109, in pounds/hour; and 0.00021 = PM2.5 emission contribution from EQUI115, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 50	1869	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 50 using the following equations: STRU50L = EQUI125FL + EQUI126FL + 0.000106 STRU50L3A = [(STRU50L2 + STRU50L3 + STRU50L4 +...+ STRU50L91 + STRU50L92 + STRU50L93) – STRU50L1] / 92 days where: STRU50L# = total daily lead emissions emitted through STRU 50, in pounds/day; STRU50L3A = 92-day rolling average lead emissions emitted through STRU 50 for the previous 92-day period, in pounds/day; EQUI125FL = total uncaptured lead emissions from EQUI 125, in pounds/day; EQUI126FL = total uncaptured lead emissions from EQUI 126, in pounds/day; and 0.000106 = lead emission contribution from EQUI115, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 50	1870	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 50 using the following equations: STRU50L = EQUI125FL + EQUI126FL STRU50L365S = (STRU50L2 + STRU50L3 + STRU50L4 +...+ STRU50L364 + STRU50L365 + STRU50L366) – STRU50L1 where: STRU50L# = total daily lead emissions emitted through STRU 50, in pounds/day; STRU50L365S = 365-day rolling sum lead emissions emitted through STRU 50 for the previous 365-day period, in pounds/year; EQUI125FL = total uncaptured lead emissions from EQUI 125, in pounds/day; and EQUI126FL = total uncaptured lead emissions from EQUI 126, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 50	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 50 from any emission units other than EQUI 109, EQUI 115, EQUI 116, EQUI 125, or EQUI 126 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 51	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.05654 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 51	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.05654 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 51	1862	The Permittee shall limit emissions of Lead <= 0.01006 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 51	1864	The Permittee shall limit emissions of Nitrogen Oxides <= 0.2453 pounds per hour 1-hour average This is the emission rate used in modeling and it represents the contributions from EQUI 110 and EQUI 112. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 51	1865	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 51 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 51 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 51	1866	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 51 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 51 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual die casting lead emissions from STRU 51 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 51	1867	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 51 using the following equation: STRU51PM10 = EQUI149FPM10 + EQUI152FPM10 + EQUI154FPM10 + EQUI156FPM10+ 0.01864 where: STRU51PM10 = total daily average PM10 emissions emitted through STRU 51, in pounds/hour; EQUI149FPM10 = total daily average uncaptured PM10 emissions from EQUI 149, in pounds/hour; EQUI152FPM10 = total daily average uncaptured PM10 emissions from EQUI 152, in pounds/hour; EQUI154FPM10 = total daily average uncaptured PM10 emissions from EQUI 154, in pounds/hour; EQUI156FPM10 = total daily average uncaptured PM10 emissions from EQUI 156, in pounds/hour; and 0.01864 = total daily average PM10 emission contribution from EQUI 110 and 112, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 51	1868	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 51 using the following equation: STRU51PM2.5 = EQUI149FPM2.5 + EQUI152FPM2.5 + EQUI154FPM2.5 + EQUI156FPM2.5 + 0.01864 where: STRU51PM2.5 = total daily average PM2.5 emissions emitted through STRU 51, in pounds/hour; EQUI149FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 149, in pounds/hour; EQUI152FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 152, in pounds/hour; EQUI154FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 154, in pounds/hour; EQUI156FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 156, in pounds/hour; and 0.01864 = total daily average PM2.5 emission contribution from EQUI 110 and 112, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 51	1869	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 51 using the following equations: STRU51L = EQUI149FL + EQUI152FL + EQUI154FL + EQUI156FL STRU51L3A = [(STRU51L2 + STRU51L3 + STRU51L4 +...+ STRU51L91 + STRU51L92 + STRU51L93) – STRU51L1] / 92 days where: STRU51L# = total daily lead emissions emitted through STRU 51, in pounds/day; STRU51L3A = 92-day rolling average lead emissions emitted through STRU 51 for the previous 92-day period, in pounds/day; EQUI149FL = total uncaptured lead emissions from EQUI 149, in pounds/day; EQUI152FL = total uncaptured lead emissions from EQUI 152, in pounds/day; EQUI154FL = total uncaptured lead emissions from EQUI 154, in pounds/day; and EQUI156FL = total uncaptured lead emissions from EQUI 156, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 51	1870	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 51 using the following equations: STRU51L = EQUI149FL + EQUI152FL + EQUI154FL + EQUI156FL STRU51L365S = (STRU51L2 + STRU51L3 + STRU51L4 +...+ STRU51L364 + STRU51L365 + STRU51L366) – STRU51L1 where: STRU51L# = total daily lead emissions emitted through STRU 51, in pounds/day; STRU51L365S = 365-day rolling sum lead emissions emitted through STRU 51 for the previous 365-day period, in pounds/year; EQUI149FL = total uncaptured lead emissions from EQUI 149, in pounds/day; EQUI152FL = total uncaptured lead emissions from EQUI 152, in pounds/day; EQUI154FL = total uncaptured lead emissions from EQUI 154, in pounds/day; and EQUI156FL = total uncaptured lead emissions from EQUI 156, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 51	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 51 from any emission units other than EQUI 110, EQUI 112, EQUI 149, EQUI 152, EQUI 154, or EQUI 156 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 52	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.04234 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 52	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.04234 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 52	1862	The Permittee shall limit emissions of Lead <= 0.006304 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 52	1864	The Permittee shall limit emissions of Nitrogen Oxides <= 0.2453 pounds per hour 1-hour average This is the emission rate used in modeling and it represents the contributions from EQUI 110 and EQUI 112. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 52	1865	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 52 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 52 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 52	1866	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 52 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 52 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual die casting lead emissions from STRU 52 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 52	1867	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 52 using the following equation: STRU52PM10 = EQUI147FPM10 + EQUI158FPM10 + 0.01864 where: STRU52PM10 = total daily average PM10 emissions emitted through STRU 52, in pounds/hour; EQUI147FPM10 = total daily average uncaptured PM10 emissions from EQUI 147, in pounds/hour; EQUI158FPM10 = total daily average uncaptured PM10 emissions from EQUI 158, in pounds/hour; and 0.01864 = total daily average PM10 emission contribution from EQUI 110 and EQUI 112, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 52	1868	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 52 using the following equation: STRU52PM2.5 = EQUI147FPM2.5 + EQUI158FPM2.5 + 0.01864 where: STRU52PM2.5 = total daily average PM2.5 emissions emitted through STRU 52, in pounds/hour; EQUI147FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 147, in pounds/hour; and EQUI158FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 158, in pounds/hour; and 0.01864 = total daily average PM2.5 emission contribution from EQUI 110 and EQUI 112, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 52	1869	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 52 using the following equations: STRU52L = EQUI147FL + EQUI158FL STRU52L3A = [(STRU52L2 + STRU52L3 + STRU52L4 +...+ STRU52L91 + STRU52L92 + STRU52L93) – STRU52L1] / 92 days where: STRU52L# = total daily lead emissions emitted through STRU 52, in pounds/day; STRU52L3A = 92-day rolling average lead emissions emitted through STRU 52 for the previous 92-day period, in pounds/day; EQUI147FL = total uncaptured lead emissions from EQUI 147, in pounds/day; and EQUI158FL = total uncaptured lead emissions from EQUI 158, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 52	1870	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 52 using the following equations: STRU52L = EQUI147FL + EQUI158FL STRU52L365S = (STRU52L2 + STRU52L3 + STRU52L4 +...+ STRU52L364 + STRU52L365 + STRU52L366) – STRU52L1 where: STRU52L# = total daily lead emissions emitted through STRU 52, in pounds/day; STRU52L365S = 365-day rolling sum lead emissions emitted through STRU 52 for the previous 365-day period, in pounds/year; EQUI147FL = total uncaptured lead emissions from EQUI 147, in pounds/day; and EQUI158FL = total uncaptured lead emissions from EQUI 158, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 52	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 52 from any emission units other than EQUI 110, EQUI 112, EQUI 147 or EQUI 158 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A)& (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 53	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.03630 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 53	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.03630 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 53	1862	The Permittee shall limit emissions of Lead <= 0.004705 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 53	1864	The Permittee shall limit emissions of Nitrogen Oxides <= 0.2453 pounds per hour 1-hour average This is the emission rate used in modeling and it represents the contributions from EQUI 110 and EQUI 112. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 53	1866	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 53 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 53 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 53	1867	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 53 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 53 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual die casting lead emissions from STRU 53 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 53	1868	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 53 using the following equation: STRU53PM10 = EQUI146FPM10 + EQUI150FPM10 + 0.01864 where: STRU53PM10 = total daily average PM10 emissions emitted through STRU 53, in pounds/hour; EQUI146FPM10 = total daily average uncaptured PM10 emissions from EQUI 146, in pounds/hour; EQUI150FPM10 = total daily average uncaptured PM10 emissions from EQUI 150, in pounds/hour: and 0.01864 = total daily average PM10 emission contribution from EQUI 110 and EQUI 112, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 53	1869	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 53 using the following equation: STRU53PM2.5 = EQUI146FPM2.5 + EQUI150FPM2.5 + 0.01864 where: STRU53PM2.5 = total daily average PM2.5 emissions emitted through STRU 53, in pounds/hour; EQUI146FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 146, in pounds/hour; EQUI150FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 150, in pounds/hour; and 0.01864 = total daily average PM10 emission contribution from EQUI 110 and EQUI 112, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 53	1870	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 53 using the following equations: STRU53L = EQUI146FL + EQUI150FL STRU53L3A = [(STRU53L2 + STRU53L3 + STRU53L4 +...+ STRU53L91 + STRU53L92 + STRU53L93) – STRU53L1] / 92 days where: STRU53L# = total daily lead emissions emitted through STRU 53, in pounds/day; STRU53L3A = 92-day rolling average lead emissions emitted through STRU 53 for the previous 92-day period, in pounds/day; EQUI146FL = total uncaptured lead emissions from EQUI 146, in pounds/day; and EQUI150FL = total uncaptured lead emissions from EQUI 150, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 53	1871	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 53 using the following equations: STRU53L = EQUI146FL + EQUI150FL STRU53L365S = (STRU53L2 + STRU53L3 + STRU53L4 +...+ STRU53L364 + STRU53L365 + STRU53L366) – STRU53L1 where: STRU53L# = total daily lead emissions emitted through STRU 53, in pounds/day; STRU53L365S = 365-day rolling sum lead emissions emitted through STRU 53 for the previous 365-day period, in pounds/year; EQUI146FL = total uncaptured lead emissions from EQUI 146, in pounds/day; and EQUI150FL = total uncaptured lead emissions from EQUI 150, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 53	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 53 from any emission units other than EQUI 110, EQUI 112, EQUI 146 or EQUI 150 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 56	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.0429 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 56	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.0429 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 56	1862	The Permittee shall limit emissions of Lead <= 0.00644 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 56	1864	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 56 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 56 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 56	1864	The Permittee shall limit emissions of Nitrogen Oxides <= 0.2453 pounds per hour 1-hour average This is the emission rate used in modeling and it represents the contributions from EQUI 110 and EQUI 112. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 56	1865	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 56 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 56 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual die casting lead emissions from STRU 56 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 56	1866	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 56 using the following equation: STRU56PM10 = EQUI153FPM10 + EQUI157FPM10 + 0.01864 where: STRU56PM10 = total daily average PM10 emissions emitted through STRU 56, in pounds/hour; EQUI153FPM10 = total daily average uncaptured PM10 emissions from EQUI 153, in pounds/hour; EQUI157FPM10 = total daily average uncaptured PM10 emissions from EQUI 157, in pounds/hour; and 0.01864 = total daily average PM10 emission contribution from EQUI 110 and EQUI 112, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 56	1867	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 56 using the following equation: STRU56PM2.5 = EQUI153FPM2.5 + EQUI157FPM2.5 + 0.01864 where: STRU56PM2.5 = total daily average PM2.5 emissions emitted through STRU 56, in pounds/hour; EQUI153FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 153, in pounds/hour; EQUI157FPM2.5 = total daily average uncaptured PM2.5 emissions from EQUI 157, in pounds/hour; and 0.01864 = total daily average PM2.5 emission contribution from EQUI 110 and EQUI 112, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 56	1868	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 56 using the following equations: STRU56L = EQUI153FL + EQUI157FL STRU56L3A = [(STRU56L2 + STRU56L3 + STRU56L4 +...+ STRU56L91 + STRU56L92 + STRU56L93) – STRU56L1] / 92 days where: STRU56L# = total daily lead emissions emitted through STRU 56, in pounds/day; STRU56L3A = 92-day rolling average lead emissions emitted through STRU 56 for the previous 92-day period, in pounds/day; EQUI153FL = total uncaptured lead emissions from EQUI 153, in pounds/day; and EQUI157FL = total uncaptured lead emissions from EQUI 157, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 56	1869	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 56 using the following equations: STRU56L = EQUI153FL + EQUI157FL STRU56L365S = (STRU56L2 + STRU56L3 + STRU56L4 +...+ STRU56L364 + STRU56L365 + STRU56L366) – STRU56L1 where: STRU56L# = total daily lead emissions emitted through STRU 56, in pounds/day; STRU56L365S = 365-day rolling sum lead emissions emitted through STRU 56 for the previous 365-day period, in pounds/year; EQUI153FL = total uncaptured lead emissions from EQUI 153, in pounds/day; and EQUI157FL = total uncaptured lead emissions from EQUI 157, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 56	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 56 from any emission units other than EQUI 110, EQUI 112, EQUI 153 or EQUI 157 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. (A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 57	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.00109 pounds per hour 3-hour average This is the emission rate used in modeling and it represents controlled emissions at process capacity. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 57	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.00109 pounds per hour 3-hour average This is the emission rate used in modeling and it represents controlled emissions at process capacity. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 57	1862	The Permittee shall limit emissions of Lead <= 0.00002 pounds per day 3-hour average This is the emission rate used in modeling and it represents controlled emissions at capacity. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 57	1871	PM < 10 micron: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure controlled emissions, in pounds per hour at maximum operating rate of EQUI 113 and EQUI 114. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 57	1872	PM < 2.5 micron: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure controlled emissions, in pounds per hour at maximum operating rate of EQUI 113 and EQUI 114. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 57	1873	Lead: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour at maximum operating rate of EQUI 113 and EQUI 114. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 57	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 57 from any emission units other than EQUI 113 and EQUI 114 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. (A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
STRU 59	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 59 from any emission units other than EQUI 174 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 68	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.01744 pounds per hour 3-hour average This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 68	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.01744 pounds per hour 3-hour average This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 68	1862	The Permittee shall limit emissions of Lead <= 0.00000115 pounds per day 3-hour average This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 68	1864	The Permittee shall limit emissions of Nitrogen Oxides <= 0.2294 pounds per hour 1-hour average This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 68	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 68 from any emission units other than combustion emissions from EQUI 101, EQUI 102 and EQUI 104 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. (A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 69	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.00373 pounds per hour 3-hour average This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 69	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.00373 pounds per hour 3-hour average This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 69	1862	The Permittee shall limit emissions of Lead <= 0.00000025 pounds per day 3-hour average This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 69	1864	The Permittee shall limit emissions of Nitrogen Oxides <= 0.04902 pounds per hour 1-hour average This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 69	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 69 from any emission units other than combustion emissions from EQUI 103 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. (A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 70	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.00224 pounds per hour 3-hour average This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 70	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.00224 pounds per hour 3-hour average This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 70	1862	The Permittee shall limit emissions of Lead <= 0.00000015 pounds per day 3-hour average This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 70	1864	The Permittee shall limit emissions of Nitrogen Oxides <= 0.02941 pounds per hour 1-hour average This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 70	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 70 from any emission units other than combustion emissions from EQUI 222 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. (A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 71	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.0348 pounds per hour 3-hour average This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 71	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.0348 pounds per hour 3-hour average This is the emission rate used in modeling and it represents uncontrolled emissions at process capacity. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 71	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 71 from any emission units other than EQUIs 223, 224, 225, 226, 227, 228, 229, 230, 231, and 232 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. (A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 72	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.006336 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 72	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.006336 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 72	1864	Particulate Matter: Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 72 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 72 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 72	1866	PM < 10 micron: PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 72 using the following equation: STRU72PM10 = EQUI240PM10 where: STRU72PM10 = total daily average PM10 emissions emitted through STRU 72 from EQUI 240, in pounds/hour; and EQUI240PM10 = total daily average PM10 emissions from EQUI 240, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 72	1867	PM < 2.5 micron: PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 72 using the following equation: STRU72PM2.5 = EQUI240PM2.5 where: STRU72PM2.5 = total daily average PM2.5 emissions emitted through STRU 72 from EQUI 240, in pounds/hour; and EQUI240PM2.5 = total daily average PM2.5 emissions from EQUI 240, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 72	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 72 from any emission units other than EQUI 240 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. (A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 73	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.01012 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 73	19880	The Permittee shall limit emissions of PM < 2.5 micron <= 0.01012 pounds per hour daily average. [Minn. R. 7007.0080, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 73	19890	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 73 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 73 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 73	20080	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 73 using the following equation: STRU73PM10 = PM10UV + PM10VOC + PM10WB where: STRU73PM10 = total daily average PM10 emissions emitted through STRU 73 from all EQUIs in COMG 2, COMG 4, and COMG 8, in pounds/hour; PM10UV = total daily average PM10 emissions from all EQUIs in COMG 2, in pounds/hour; PM10VOC = total daily average PM10 emissions from all EQUIs in COMG 4, in pounds/hour; PM10WB = total daily average PM10 emissions from all EQUIs in COMG 8, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 73	20081	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 73 using the following equations: STRU73PM2.5 = PM2.5UV + PM2.5VOC + PM2.5WB where: STRU73PM2.5 = total daily average PM2.5 emissions emitted through STRU 73 from all EQUIs in COMG 2, COMG 4, and COMG 8, in pounds/hour; PM2.5UV = total daily average PM2.5 emissions from COMG 2, in pounds/hour; PM2.5VOC = total daily average PM2.5 emissions from COMG 4, in pounds/hour; PM2.5WB = total daily average PM2.5 emissions from COMG 8, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 73	20082	Permit No. 12300341-101 and every 60 months thereafter to verify compliance with the PM10 emission limit of 0.01012 pounds per hour daily average. This test shall be conducted concurrently with the PM2.5 performance test. The Permittee shall calculate emissions of all units operating during the test using the methods described elsewhere in this permit. The total emissions calculated in this manner shall be compared to the measured emissions during the test. If the calculated emissions are equal or higher than the measured emissions, the Permittee will continue to use the emission calculations prescribed in this permit. If measured emissions are higher than calculated emissions, the Permittee must submit a plan to revise emission factors within 30 days of receiving the Notice of Compliance. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing.
STRU 73	20083	Permit No. 12300341-101 and every 60 months thereafter to measure emissions to verify compliance with the PM2.5 emission limit of 0.01012 pounds per hour daily average. This shall be conducted concurrently with the PM10 performance test. The Permittee shall calculate emissions of all units operating during the test using the methods described elsewhere in this permit. The total emissions calculated in this manner shall be compared to the measured emissions during the test. If the calculated emissions are equal or higher than the measured emissions, the Permittee will continue to use the emission calculations prescribed in this permit. If measured emissions are higher than calculated emissions, the Permittee must submit a plan to revise emission factors within 30 days of receiving the Notice of Compliance. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future

SI Id	Sequence	Requirement
STRU 74	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.02084 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 74	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.02084 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 74	1862	The Permittee shall limit emissions of Lead <= 0.01233 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 74	1864	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 74 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 74 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 74	1865	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 74 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 74 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 74 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 74	1866	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 74 using the following equation: STRU74PM10 = EQUI130PM10 + EQUI131PM10 where: STRU74PM10 = total daily average PM10 emissions emitted through STRU 74, in pounds/hour; EQUI130PM10 = total daily average PM10 stack emissions from EQUI 130, in pounds/hour; and EQUI131PM10 = total daily average PM10 stack emissions from EQUI 131, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 74	1867	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 74 using the following equation: STRU74PM2.5 = EQUI130PM2.5 + EQUI131PM2.5 where: STRU74PM2.5 = total daily average PM2.5 emissions emitted through STRU 74, in pounds/hour; EQUI130PM2.5 = total daily average PM2.5 stack emissions from EQUI 130, in pounds/hour; and EQUI131PM2.5 = total daily average PM2.5 stack emissions from EQUI 131, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 74	1868	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 74 the following equations: STRU74L = EQUI130L + EQUI130L STRU74L3A = [(STRU74L2 + STRU74L3 + STRU74L4 +.... + STRU74L91 + STRU74L92 + STRU74L93) – STRU74L1] / 92 days where: STRU74L# = total daily lead emissions emitted through STRU 74, in pounds/day; STRU74L3A = 92-day rolling average lead emissions emitted through STRU 74 for the previous 92-day period, in pounds/day; EQUI130L = total lead stack emissions from EQUI 130, in pounds/day; and EQUI131L = total lead stack emissions from EQUI 131, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 74	1869	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 74 using the following equations: STRU74L = EQUI130L + EQUI131L STRU74L365S = (STRU74L2 + STRU74L3 + STRU74L4 +.... + STRU74L364 + STRU74L365 + STRU74L366) – STRU74L1 where: STRU74L# = total daily lead emissions emitted through STRU 74, in pounds/day; STRU74L365S = 365-day rolling sum lead emissions emitted through STRU 74 for the previous 365-day period, in pounds/year; EQUI130L = total lead stack emissions from EQUI 130, in pounds/day; and EQUI131L = total lead stack emissions from EQUI 131, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 74	1871	Particulate Matter: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 74	1871	PM < 10 micron: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 74	1872	PM < 2.5 micron: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0080, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 74	1873	Lead: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 74	1874	Particulate Matter: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 74	1875	PM < 10 micron: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2A(& 2(B)), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 74	1876	PM < 2.5 micron: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 74	1877	Lead: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereaGer to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 74	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 74 from any emission units other than EQUI 130 or EQUI 131 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 75	1860	The Permittee shall limit emissions of PM < 10 micron <= 0.03348 pounds per hour daily average. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 75	1861	The Permittee shall limit emissions of PM < 2.5 micron <= 0.03348 pounds per hour daily average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 75	1862	The Permittee shall limit emissions of Lead <= 0.01980 pounds per day 92-day rolling average. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
STRU 75	1864	Particulate Matter: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following: 1) The total daily average hourly PM10 emissions from STRU 75 for the previous operating day using the formulas specified in this permit; and 2) The total daily average hourly PM2.5 emissions from STRU 75 for the previous operating day using the formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]
STRU 75	1865	Lead: Daily Recordkeeping. By 4:30pm on each day of operation, the Permittee shall calculate and record the following using the formulas specified in this permit: 1) The total lead emissions from STRU 75 the previous operating day using formulas specified in this permit; 2) The 92-day rolling average daily lead emissions from STRU 75 for the previous 92-day period using formulas specified in this permit; and 3) The 365-day rolling sum annual lead emissions from STRU 75 for the previous 365-day period using formulas specified in this permit. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 75	1866	PM < 10 micron: Daily Calculations. The Permittee shall calculate the average daily PM10 emissions from STRU 75 using the following equation: STRU75PM10 = EQUI134PM10 + EQUI135PM10 where: STRU75PM10 = total daily average PM10 emissions emitted through STRU 75, in pounds/hour; EQUI134PM10 = total daily average PM10 stack emissions from EQUI 134, in pounds/hour; and EQUI135PM10 = total daily average PM10 stack emissions from EQUI 135, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 75	1867	PM < 2.5 micron: Daily Calculations. The Permittee shall calculate the average daily PM2.5 emissions from STRU 75 using the following equation: STRU75PM2.5 = EQUI134PM2.5 + EQUI135PM2.5 where: STRU75PM2.5 = total daily average PM2.5 stack emissions emitted through STRU 75, in pounds/hour; and EQUI134PM2.5 = total daily average PM2.5 stack emissions from EQUI 134, in pounds/hour; and EQUI135PM2.5 = total daily average PM2.5 stack emissions from EQUI 135, in pounds/hour. [Minn. R. 7007.0800, subps. 4-5]
STRU 75	1868	Lead: Daily Calculations (92-Day Rolling Average). The Permittee shall calculate the 92-day rolling average daily lead emissions from STRU 75 using the following equations: STRU75L = EQUI134L + EQUI135L STRU75L3A = [(STRU75L2 + STRU75L3 + STRU75L4 +...+ STRU75L91 + STRU75L92 + STRU75L93) - STRU75L1] / 92 days where: STRU75L# = total daily lead emissions emitted through STRU 75, in pounds/day; STRU75L3A = 92-day rolling average lead emissions emitted through STRU 75 for the previous 92-day period, in pounds/day; EQUI134L = total lead stack emissions from EQUI 134, in pounds/day; and EQUI135L = total lead stack emissions from EQUI 135, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]
STRU 75	1869	Lead: Daily Calculations (365-Day Rolling Sum). The Permittee shall calculate the 365-day rolling sum annual lead emissions from STRU 75 using the following equations: STRU75L = EQUI134L + EQUI135L STRU75L365S = (STRU75L2 + STRU75L3 + STRU75L4 + . . . + STRU75L364 + STRU75L365 + STRU75L366) - STRU21L1 where: STRU75L# = total daily lead emissions emitted through STRU 75, in pounds/day; STRU75L365S = 365-day rolling sum lead emissions emitted through STRU 75 for the previous 365-day period, in pounds/year; EQUI134L = total lead stack emissions from EQUI 134, in pounds/day; and EQUI135L = total lead stack emissions from EQUI 135, in pounds/day. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
STRU 75	1871	Particulate Matter: Particulate Matter: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 75	1871	PM < 10 micron: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 75	1872	PM < 2.5 micron: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A)& 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 75	1873	Lead: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to verify the emission factor described in Appendix D, and determine overall control efficiency of control equipment train under COMG 12. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
STRU 75	1874	Particulate Matter: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 75	1875	PM < 10 micron: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
STRU 75	1876	PM < 2.5 micron: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereafter to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subps. 2(A) & 2(B), Minn. R. 7009.0020-0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 75	1877	Lead: The Permittee shall conduct a performance test due before 12 months following issuance of Permit No. 12300341-101 and at a minimum every 60 months thereaGer to measure emissions, in pounds per hour. The Commissioner will set the subsequent test frequency as stated in a Notice of Compliance (NOC) or Notice of Performance Test Verification (NOPTV) letter with review of the initial performance test. Subsequent tests shall be completed no less than every 60-months by the due date (month and day) based on the initial test date or more frequently as stated in the NOC/NOPTV letter. If the Commissioner sets a test frequency at less than every 60 months, the Permittee must apply for an administrative amendment to incorporate the prescribed test frequency into the permit. A major amendment is required to reduce the test frequency once set in the permit. The performance test shall be conducted at worst-case conditions defined at Minn. R. 7017.2005, subp. 8 or at the operating conditions described at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 12, or other method approved by MPCA in the performance test plan approval. The operating conditions during the test, and required recordkeeping and reporting are described in Appendix E. Testing conducted during the 60 days prior to a performance test due date will not reset the due date for future testing. Testing conducted more than 60 days prior to the specified due date satisfies this test due date requirement but will reset future performance test due dates based on the most recent performance test date. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subd. 4a(a)]
STRU 75	1878	The Permittee is prohibited from releasing emissions of pollutants through STRU 75 from any emission units other than EQUI 134 or EQUI 135 without obtaining a major amendment to this permit to revise emission limits and compliance demonstration methods based on revised dispersion modeling as described elsewhere in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7007.1500, subp. 1(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
TREA 1	18220	The Permittee shall vent controlled emissions from EQUIs 101, 102, 103, 104, and 221 as exhausted from TREA 60 to TREA 1 whenever EQUIs 101, 102, 103, 104, or 221 operate, and operate and maintain TREA 1 at all times that any emissions are vented to TREA 1. The Permittee shall document periods of non-operation of TREA 1 whenever EQUIs 101, 102, 103, 104, or 221 are operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 1	18240	The Permittee shall comply with the requirements of COMG 11 whenever emissions are vented to TREA 1. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 1	18250	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 1	18260	Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 1	18270	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
TREA 1	18280	Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]
TREA 1	18300	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 1	19600	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 1	19631	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 1	19632	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]

SI Id	Sequence	Requirement
TREA 25	18220	The Permittee shall vent controlled emissions from EQUIs 121, 122, and 123 as exhausted from TREA 61 to TREA 25 whenever EQUIs 121, 122, or 123 operate, and operate and maintain TREA 25 at all times that any emissions are vented to TREA 25. The Permittee shall document periods of non-operation of TREA 25 whenever EQUIs 121, 122, or 123 are operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 25	18230	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 25. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 25	18240	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 25	18260	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
TREA 25	18260	Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 25	18280	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 25	18280	Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]
TREA 25	18300	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 25	19600	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 25	19631	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]

SI Id	Sequence	Requirement
TREA 26	18220	The Permittee shall vent controlled emissions from EQUIs 124, 125, 126 and 157 as exhausted from TREAs 62 and 63 to TREA 26 whenever EQUIs 124, 125, 126 or 157 operate, and operate and maintain TREA 26 at all times that any emissions are vented to TREA 26. The Permittee shall document periods of non-operation of TREA 42 whenever EQUIs 124, 125, 126 or 157 are operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 26	18230	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 26. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 26	18240	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 26	18260	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
TREA 26	18260	Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 26	18280	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 26	18280	Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]
TREA 26	18300	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 26	19600	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 26	19631	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]

SI Id	Sequence	Requirement
TREA 27	18220	The Permittee shall vent controlled emissions from EQUIs 127, 128, and 129 as exhausted from TREA 64 to TREA 27 whenever EQUIs 127, 128, or 129 operate, and operate and maintain TREA 27 at all times that any emissions are vented to TREA 27. The Permittee shall document periods of non-operation of TREA 27 whenever EQUIs 127, 128, or 129 are operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 27	18230	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 27. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 27	18240	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 27	18260	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
TREA 27	18260	Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 27	18280	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 27	18280	Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]
TREA 27	18300	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 27	19600	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 27	19631	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]

SI Id	Sequence	Requirement
TREA 30	18220	The Permittee shall vent controlled emissions from EQUIs 132 and 133 as exhausted from TREA 66 to TREA 30 whenever EQUIs 132 or 133 operate, and operate and maintain TREA 30 at all times that any emissions are vented to TREA 30. The Permittee shall document periods of non-operation of TREA 30 whenever EQUIs 132 or 133 are operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 30	18230	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 30. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 30	18240	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 30	18260	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
TREA 30	18260	Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 30	18280	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 30	18280	Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]
TREA 30	18300	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 30	19600	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 30	19631	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]

SI Id	Sequence	Requirement
TREA 33	18220	The Permittee shall vent controlled emissions from EQUI 136 as exhausted from TREA 68 to TREA 33 whenever EQUI 136 operates, and operate and maintain TREA 33 at all times that any emissions are vented to TREA 33. The Permittee shall document periods of non-operation of TREA 33 whenever EQUI 136 is operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 33	18230	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 33. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 33	18240	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 33	18260	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
TREA 33	18260	Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 33	18280	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 33	18280	Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]
TREA 33	18300	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 33	19600	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 33	19631	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]

SI Id	Sequence	Requirement
TREA 34	18220	The Permittee shall vent controlled emissions from EQUIs 137 and 138 as exhausted from TREA 69 to TREA 34 whenever EQUIs 137 or 138 operate, and operate and maintain TREA 34 at all times that any emissions are vented to TREA 34. The Permittee shall document periods of non-operation of TREA 34 whenever EQUIs 137 or 138 are operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 34	18230	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 34. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 34	18240	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 34	18260	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
TREA 34	18260	Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 34	18280	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 34	18280	Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]
TREA 34	18300	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 34	19600	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 34	19631	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]

SI Id	Sequence	Requirement
TREA 35	18220	The Permittee shall vent controlled emissions from EQUIs 139 and 140 as exhausted from TREA 70 to TREA 35 whenever EQUIs 139 or 140 operate, and operate and maintain TREA 35 at all times that any emissions are vented to TREA 35. The Permittee shall document periods of non-operation of TREA 35 whenever EQUIs 139 or 140 are operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 35	18230	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 35. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 35	18240	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 35	18260	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
TREA 35	18260	Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 35	18280	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 35	18280	Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]
TREA 35	18300	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 35	19600	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 35	19631	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]

SI Id	Sequence	Requirement
TREA 36	18220	The Permittee shall vent controlled emissions from EQUIs 141, 142, 143, and 155 as exhausted from TREAs 71 and 72 to TREA 36 whenever EQUIs 141, 142, 143, or 155 operate, and operate and maintain TREA 36 at all times that any emissions are vented to TREA 36. The Permittee shall document periods of non-operation of TREA 36 whenever EQUIs 141, 142, 143, or 155 are operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 36	18230	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 36. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 36	18240	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 36	18260	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
TREA 36	18260	Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 36	18280	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 36	18280	Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]
TREA 36	18300	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 36	19600	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 36	19631	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]

SI Id	Sequence	Requirement
TREA 39	18220	The Permittee shall vent controlled emissions from EQUIs 146 and 158 as exhausted from TREA 73 to TREA 39 whenever EQUIs 146 or 158 operate, and operate and maintain TREA 39 at all times that any emissions are vented to TREA 39. The Permittee shall document periods of non-operation of TREA 39 whenever EQUIs 146 or 158 are operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 39	18230	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 39. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 39	18240	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 39	18260	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
TREA 39	18260	Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 39	18280	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 39	18280	Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]
TREA 39	18300	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 39	19600	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 39	19631	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]

SI Id	Sequence	Requirement
TREA 40	18220	The Permittee shall vent controlled emissions from EQUI 147 as exhausted from TREA 74 to TREA 40 whenever EQUI 147 operates, and operate and maintain TREA 40 at all times that any emissions are vented to TREA 40. The Permittee shall document periods of non-operation of TREA 40 whenever EQUI 147 is operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 40	18230	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 40. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 40	18240	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 40	18260	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
TREA 40	18260	Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 40	18280	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 40	18280	Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]
TREA 40	18300	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 40	19600	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 40	19631	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]

SI Id	Sequence	Requirement
TREA 41	18220	The Permittee shall vent controlled emissions from EQUIs 149 and 150 as exhausted from TREA 75 to TREA 41 whenever EQUIs 149 or 150 operate, and operate and maintain TREA 41 at all times that any emissions are vented to TREA 41. The Permittee shall document periods of non-operation of the control equipment TREA 41 whenever EQUIs 149 or 150 are operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 41	18230	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 41. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 41	18240	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 41	18260	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
TREA 41	18260	Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 41	18280	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 41	18280	Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]
TREA 41	18300	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 41	19600	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 41	19631	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]

SI Id	Sequence	Requirement
TREA 42	18220	The Permittee shall vent emissions from EQUIs 152 and 156 as exhausted from TREA 76 to TREA 42 whenever EQUIs 152 or 156 operate, and operate and maintain TREA 42 at all times that any emissions are vented to TREA 42. The Permittee shall document periods of non-operation of TREA 42 whenever EQUIs 152 or 156 are operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 42	18230	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 42. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 42	18240	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 42	18260	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
TREA 42	18260	Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 42	18280	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 42	18280	Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]
TREA 42	18300	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 42	19600	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 42	19631	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]

SI Id	Sequence	Requirement
TREA 43	18220	The Permittee shall vent controlled emissions from EQUIs 153 and 154 as exhausted from TREA 77 to TREA 43 whenever EQUIs 153 or 154 operate, and operate and maintain TREA 38 at all times that any emissions are vented to TREA 38. The Permittee shall document periods of non-operation of TREA 43 whenever EQUIs 153 or 154 are operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 43	18230	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 43. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 43	18240	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 43	18260	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
TREA 43	18260	Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 43	18280	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 43	18280	Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]
TREA 43	18300	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 43	19600	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 43	19631	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]
TREA 52	17610	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter >= 99.98 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]

SI Id	Sequence	Requirement
TREA 52	17615	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron >= 99.98 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 52	18640	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for PM < 2.5 micron >= 99.98 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 52	18641	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for Lead >= 99.90 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 52	18650	The Permittee shall vent emissions from EQUI 113 to TREA 52 whenever EQUI 113 operates, and operate and maintain TREA 52 at all times that any emissions are vented to TREA 52. The Permittee shall document periods of non-operation of the control equipment TREA 52 whenever EQUI 113 is operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 52	18660	If the Permittee replaces TREA 52, the replacement control must meet or exceed the control efficiency requirements of TREA 52 as well as comply with all other requirements of TREA 52. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 52	18670	The Permittee shall operate and maintain the HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 52	18680	Daily Inspections: Once each operating day, the Permittee shall visually inspect the condition of each HEPA filter with respect to alignment, saturation, tears, holes and any other condition that may affect the filter's performance. The Permittee shall maintain a daily written record of filter inspections. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 52	18690	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 52	18700	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 53	17610	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter >= 99.98 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 53	17615	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron >= 99.98 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 53	18640	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for PM < 2.5 micron >= 99.98 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
TREA 53	18641	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for Lead >= 99.90 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 53	18650	The Permittee shall vent emissions from EQUI 114 to TREA 53 whenever EQUI 114 operates, and operate and maintain TREA 53 at all times that any emissions are vented to TREA 53. The Permittee shall document periods of non-operation of the control equipment TREA 53 whenever EQUI 114 is operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 53	18660	If the Permittee replaces TREA 53, the replacement control must meet or exceed the control efficiency requirements of TREA 53 as well as comply with all other requirements of TREA 53. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 53	18670	The Permittee shall operate and maintain the HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 53	18680	Daily Inspections: Once each operating day, the Permittee shall visually inspect the condition of each HEPA filter with respect to alignment, saturation, tears, holes and any other condition that may affect the filter's performance. The Permittee shall maintain a daily written record of filter inspections. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 53	18690	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 53	18700	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 54	17610	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter >= 99.98 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 54	17615	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron >= 99.98 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 54	18640	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for PM < 2.5 micron >= 99.98 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 54	18641	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for Lead >= 99.90 percent control efficiency. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 54	18650	The Permittee shall vent emissions from EQUI 115 to TREA 54 whenever EQUI 115 operates, and operate and maintain TREA 54 at all times that any emissions are vented to TREA 54. The Permittee shall document periods of non-operation of the control equipment TREA 54 whenever EQUI 115 is operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
TREA 54	18660	If the Permittee replaces TREA 54, the replacement control must meet or exceed the control efficiency requirements of TREA 54 as well as comply with all other requirements of TREA 54. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 54	18670	The Permittee shall operate and maintain the HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 54	18680	Daily Inspections: Once each operating day, the Permittee shall visually inspect the condition of each HEPA filter with respect to alignment, saturation, tears, holes and any other condition that may affect the filter's performance. The Permittee shall maintain a daily written record of filter inspections. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 54	18690	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 54	18700	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 55	18240	The Permittee shall operate and maintain control equipment such that it meets the requirements of COMG 14. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 55	18650	The Permittee shall vent emissions from EQUI 84 to TREA 55 whenever EQUI 84 operates, and operate and maintain TREA 55 at all times that any emissions are vented to TREA 55. The Permittee shall document periods of non-operation of the control equipment TREA 55 whenever EQUI 84 is operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 55	18660	If the Permittee replaces TREA 55, the replacement control must meet or exceed the control efficiency requirements of COMG 14 as well as comply with all other requirements of COMG 14. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 56	18240	The Permittee shall operate and maintain control equipment such that it meets the requirements of COMG 14. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 56	18650	The Permittee shall vent emissions from EQUI 88 to TREA 56 whenever EQUI 88 operates, and operate and maintain TREA 56 at all times that any emissions are vented to TREA 56. The Permittee shall document periods of non-operation of the control equipment TREA 56 whenever EQUI 88 is operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
TREA 56	18660	If the Permittee replaces TREA 56, the replacement control must meet or exceed the control efficiency requirements of COMG 14 as well as comply with all other requirements of COMG 14. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 57	18240	The Permittee shall operate and maintain control equipment such that it meets the requirements of COMG 14. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 57	18650	The Permittee shall vent emissions from EQUI 95 to TREA 57 whenever EQUI 95 operates, and operate and maintain TREA 57 at all times that any emissions are vented to TREA 57. The Permittee shall document periods of non-operation of the control equipment TREA 57 whenever EQUI 95 is operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 57	18660	If the Permittee replaces TREA 57, the replacement control must meet or exceed the control efficiency requirements of COMG 14 as well as comply with all other requirements of COMG 14. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 58	18240	The Permittee shall operate and maintain control equipment such that it meets the requirements of COMG 14. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 58	18650	The Permittee shall vent emissions from EQUI 219 to TREA 58 whenever EQUI 219 operates, and operate and maintain TREA 58 at all times that any emissions are vented to TREA 58. The Permittee shall document periods of non-operation of the control equipment TREA 58 whenever EQUI 219 is operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 58	18660	If the Permittee replaces TREA 58, the replacement control must meet or exceed the control efficiency requirements of COMG 14 as well as comply with all other requirements of COMG 14. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 59	18240	The Permittee shall operate and maintain control equipment such that it meets the requirements of COMG 14. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 59	18650	The Permittee shall vent emissions from EQUI 220 to TREA 59 whenever EQUI 220 operates, and operate and maintain TREA 59 at all times that any emissions are vented to TREA 59. The Permittee shall document periods of non-operation of the control equipment TREA 59 whenever EQUI 220 is operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
TREA 59	18660	If the Permittee replaces TREA 59, the replacement control must meet or exceed the control efficiency requirements of COMG 14 as well as comply with all other requirements of COMG 14. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 60	17611	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 60	18670	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 60	18680	The Permittee shall vent emissions from EQUIs 101, 102, 103, 104, and 221 to TREA 60 whenever EQUIs 101, 102, 103, 104, or 221 are operating, and operate and maintain TREA 60 at all times that any emissions are vented to TREA 60. The Permittee shall document periods of non-operation of the control equipment TREA 60 whenever EQUI 101, 102, 103, 104, or 221 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 60	18687	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 60	18690	The Permittee shall comply with the requirements of COMG 11 whenever emissions are vented to TREA 60. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 60	18700	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 60	18701	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 60	18702	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]

SI Id	Sequence	Requirement
TREA 60	18703	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 61	17611	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 61	18671	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 61	18680	The Permittee shall vent emissions from EQUIs 121, 122, and 123 to TREA 61 whenever EQUIs 121, 122, or 123 are operating, and operate and maintain TREA 61 at all times that any emissions are vented to TREA 61. The Permittee shall document periods of non-operation of the control equipment TREA 61 whenever EQUIs 121, 122, or 123 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 61	18687	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 61	18690	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 61. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 61	18700	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 61	18701	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 61	18702	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 61	18703	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]

SI Id	Sequence	Requirement
TREA 62	17611	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 62	18671	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 62	18680	The Permittee shall vent emissions from EQUIs 126 and 157 to TREA 62 whenever EQUIs 126 or 157 are operating, and operate and maintain TREA 62 at all times that any emissions are vented to TREA 62. The Permittee shall document periods of non-operation of the control equipment TREA 62 whenever EQUIs 126 or 157 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 62	18686	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 62. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 62	18687	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 62	18700	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 62	18700	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 62	18701	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 62	18702	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 63	17611	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
TREA 63	18671	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 63	18680	The Permittee shall vent emissions from EQUIs 124 and 125 to TREA 63 whenever EQUIs 124 or 125 are operating, and operate and maintain TREA 63 at all times that any emissions are vented to TREA 63. The Permittee shall document periods of non-operation of the control equipment TREA 63 whenever EQUIs 124 or 125 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 63	18686	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 63. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 63	18687	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 63	18700	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 63	18700	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 63	18701	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 63	18702	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 64	17611	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 64	18671	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
TREA 64	18680	The Permittee shall vent emissions from EQUIs 127, 128 and 129 to TREA 64 whenever EQUIs 127, 128 or 129 are operating, and operate and maintain TREA 64 at all times that any emissions are vented to TREA 64. The Permittee shall document periods of non-operation of the control equipment TREA 64 whenever EQUIs 127, 128 or 129 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 64	18686	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 64. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 64	18687	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 64	18700	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 64	18700	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 64	18701	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 64	18702	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 65	17611	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 65	18671	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 65	18680	The Permittee shall vent emissions from EQUIs 130 and 131 to TREA 65 whenever EQUIs 130 or 131 are operating, and operate and maintain TREA 65 at all times that any emissions are vented to TREA 65. The Permittee shall document periods of non-operation of the control equipment TREA 65 whenever EQUIs 130 or 131 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 65	18686	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 65. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
TREA 65	18687	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 65	18700	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 65	18700	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 65	18701	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 65	18702	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 66	17611	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 66	18671	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 66	18680	The Permittee shall vent emissions from EQUIs 132 and 133 to TREA 66 whenever EQUIs 132 or 133 are operating, and operate and maintain TREA 66 at all times that any emissions are vented to TREA 66. The Permittee shall document periods of non-operation of the control equipment TREA 66 whenever EQUIs 132 or 133 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 66	18686	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 66. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 66	18687	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 66	18700	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]

SI Id	Sequence	Requirement
TREA 66	18700	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 66	18701	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 66	18702	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 67	17611	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 67	18671	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 67	18680	The Permittee shall vent emissions from EQUIs 134 and 135 to TREA 67 whenever EQUIs 134 or 135 are operating, and operate and maintain TREA 67 at all times that any emissions are vented to TREA 67. The Permittee shall document periods of non-operation of the control equipment TREA 67 whenever EQUIs 134 or 135 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 67	18686	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 67. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 67	18687	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 67	18700	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 67	18700	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 67	18701	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]

SI Id	Sequence	Requirement
TREA 67	18702	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 68	17611	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 68	18671	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 68	18680	The Permittee shall vent emissions from EQUI 136 to TREA 68 whenever EQUI 136 is operating, and operate and maintain TREA 68 at all times that any emissions are vented to TREA 68. The Permittee shall document periods of non-operation of the control equipment TREA 68 whenever EQUI 136 is operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 68	18686	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 68. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 68	18687	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 68	18700	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 68	18700	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 68	18701	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 68	18702	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]

SI Id	Sequence	Requirement
TREA 69	17611	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 69	18671	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 69	18680	The Permittee shall vent emissions from EQUIs 137 and 138 to TREA 69 whenever EQUIs 137 or 138 are operating, and operate and maintain TREA 69 at all times that any emissions are vented to TREA 69. The Permittee shall document periods of non-operation of the control equipment TREA 69 whenever EQUIs 137 or 138 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 69	18686	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 69. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 69	18687	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 69	18700	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 69	18700	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 69	18701	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 69	18702	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 70	17611	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
TREA 70	18671	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 70	18680	The Permittee shall vent emissions from EQUIs 139 and 140 to TREA 70 whenever EQUIs 139 or 140 are operating, and operate and maintain TREA 70 at all times that any emissions are vented to TREA 70. The Permittee shall document periods of non-operation of the control equipment TREA 70 whenever EQUIs 139 or 140 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 70	18686	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 70. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 70	18687	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 70	18700	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 70	18700	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 70	18701	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 70	18702	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 71	17611	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 71	18671	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
TREA 71	18680	The Permittee shall vent emissions from EQUIs 141 and 143 to TREA 71 whenever EQUIs 141 or 143 are operating, and operate and maintain TREA 71 at all times that any emissions are vented to TREA 71. The Permittee shall document periods of non-operation of the control equipment TREA 71 whenever EQUIs 141 or 143 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 71	18686	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 71. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 71	18687	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 71	18700	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 71	18700	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 71	18701	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 71	18702	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 72	17611	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 72	18671	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 72	18680	The Permittee shall vent emissions from EQUIs 142 and 155 to TREA 72 whenever EQUIs 142 or 155 are operating, and operate and maintain TREA 72 at all times that any emissions are vented to TREA 72. The Permittee shall document periods of non-operation of the control equipment TREA 72 whenever EQUIs 142 or 155 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 72	18686	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 72. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
TREA 72	18687	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 72	18700	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 72	18700	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 72	18701	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 72	18702	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 73	17611	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 73	18671	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 73	18680	The Permittee shall vent emissions from EQUIs 146 and 158 to TREA 73 whenever EQUIs 146 or 158 are operating, and operate and maintain TREA 73 at all times that any emissions are vented to TREA 73. The Permittee shall document periods of non-operation of the control equipment TREA 73 whenever EQUIs 146 or 158 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 73	18686	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 73. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 73	18687	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 73	18700	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]

SI Id	Sequence	Requirement
TREA 73	18700	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 73	18701	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 73	18702	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 74	17611	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 74	18671	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 74	18680	The Permittee shall vent emissions from EQUI 147 to TREA 74 whenever EQUI 147 is operating, and operate and maintain TREA 74 at all times that any emissions are vented to TREA 74. The Permittee shall document periods of non-operation of the control equipment TREA 74 whenever EQUI 147 is operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 74	18686	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 74. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 74	18687	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 74	18700	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 74	18700	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 74	18701	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]

SI Id	Sequence	Requirement
TREA 74	18702	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 75	17611	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 75	18671	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 75	18680	The Permittee shall vent emissions from EQUIs 149 and 150 to TREA 75 whenever EQUIs 149 or 150 are operating, and operate and maintain TREA 75 at all times that any emissions are vented to TREA 75. The Permittee shall document periods of non-operation of the control equipment TREA 75 whenever EQUIs 149 or 150 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 75	18686	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 75. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 75	18687	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 75	18700	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 75	18700	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 75	18701	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 75	18702	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]

SI Id	Sequence	Requirement
TREA 76	17611	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 76	18671	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 76	18680	The Permittee shall vent emissions from EQUIs 152 and 156 to TREA 76 whenever EQUIs 152 or 156 are operating, and operate and maintain TREA 76 at all times that any emissions are vented to TREA 76. The Permittee shall document periods of non-operation of the control equipment TREA 76 whenever EQUIs 152 or 156 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 76	18686	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 76. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 76	18687	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 76	18700	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 76	18700	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 76	18701	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 76	18702	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 77	17611	The Permittee shall limit Stage 1 Filter Pressure Drop >= 0.0001 and <= 0.600 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
TREA 77	18671	The Permittee shall limit Stage 2 Filter Pressure Drop >= 0.0001 and <= 0.800 kilopascals, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change. The Permittee shall record the pressure drop at least once every 24 hours. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 77	18680	The Permittee shall vent emissions from EQUIs 153 and 154 to TREA 77 whenever EQUIs 153 or 154 are operating, and operate and maintain TREA 77 at all times that any emissions are vented to TREA 77. The Permittee shall document periods of non-operation of the control equipment TREA 77 whenever EQUIs 153 or 154 are operating. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 77	18686	The Permittee comply with the requirements of COMG 12 whenever emissions are vented to TREA 77. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 77	18687	Pressure Drop: Daily Recordkeeping. The Permittee shall record the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 77	18700	The Permittee shall operate and maintain the Stage 1, Stage 2, and HEPA filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 77	18700	Daily Inspections: Once each operating day, the Permittee shall verify if the pressure drop reading is such that filter maintenance is required as per manufacturer's specifications. If maintenance is required, the permittee shall proceed to clean the unit as per manufacturer's specifications before the unit is placed on operation the next day. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a)]
TREA 77	18701	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturer's specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 77	18702	Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 78	18220	The Permittee shall vent controlled emissions from EQUIs 130 and 131 as exhausted from TREA 65 to TREA 78 whenever EQUIs 130 or 131 operate, and operate and maintain TREA 78 at all times that any emissions are vented to TREA 78. The Permittee shall document periods of non-operation of TREA 78 whenever EQUIs 130 or 131 are operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 78	18230	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 78. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 78	18240	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 78	18260	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]

SI Id	Sequence	Requirement
TREA 78	18260	Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 78	18280	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 78	18280	Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]
TREA 78	18300	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 78	19600	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 78	19631	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]
TREA 79	18220	The Permittee shall vent controlled emissions from EQUIs 134 and 135 as exhausted from TREA 67 to TREA 79 whenever EQUIs 134 or 135 operate, and operate and maintain TREA 79 at all times that any emissions are vented to TREA 79. The Permittee shall document periods of non-operation of TREA 79 whenever EQUIs 134 or 135 are operating. [Minn. R. 7007.0800, subp. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 79	18230	The Permittee shall comply with the requirements of COMG 12 whenever emissions are vented to TREA 79. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 79	18240	The Permittee shall operate and maintain the electrostatic precipitator (ESP) in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 79	18260	Daily Monitoring: The Permittee shall physically verify the operation of the Continuous Parameter Monitoring System (CPMS) at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Minn. R. 7007.0800, subps. 4-5]
TREA 79	18260	Data Collection: The Permittee shall maintain a continuous hard copy readout or computer disk file that shows the On/Off condition of the ESP at all times. [Minn. R. 7007.0800, subps. 2(A) & (B), Minn. R. 7009.0020-7009.0090, Minn. Stat. 116.07, subd. 4a(a), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

SI Id	Sequence	Requirement
TREA 79	18280	Quarterly Inspections: At least once per calendar quarter, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components that are subject to wear or plugging, for example: bearings, belts, hoses, fans, nozzles, orifices, and ducts. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 79	18280	Monitoring Equipment: The Permittee must install and maintain a continuous parameter monitoring system (CPMS) for monitoring the ESP On/Off condition as required by this permit. The monitoring equipment must be installed, in use, and properly maintained, including maintaining the necessary parts for routine repairs of the monitoring equipment, whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]
TREA 79	18300	Annual Inspections: At least once per calendar year, or more frequently if required by the manufacturer, the Permittee shall inspect the control equipment components not covered by the quarterly inspections. This includes, but is not limited to, components that are not subject to wear or plugging including structural components, housings, and hoods. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 79	19600	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - any recorded operating parameter is outside the required operating range (e.g., total power input); or - the ESP or any of its components are found during the inspections to need repair. Corrective actions shall return operation to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the) O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken for the ESP. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 5]
TREA 79	19631	Pre-Filter and Cell Maintenance: The Permittee shall transport pre-filters and cells in leak-proof containers during cleaning, replacement, or performing other maintenance. The Permittee shall dispose of all lead-soiled materials including, but not limited to, dishwasher waste water, mop heads, rags, personal protective equipment (PPE), vacuum bags, and any other material soiled or otherwise in contact with lead as hazardous waste. [Minn. R. 7007.0800, subp. 2, Minn. R. ch. 7045]

Attachment 3. Points Calculator

Points Calculator

1) AI ID No.:	2005
2) Facility Name:	Water Gremlin Co
3) Small business? y/n?	n
4) Air Project Tracking Numbers (including all	6305, 6248, 5591
5) Date of each Application Received:	10/23/18, 6/30/16
6) Final Permit No.	12300341-101
7) Permit Staff	Jacobe Timler

Total Points 143

Application Type	Air Project Tracking No.	Tempo Activity ID	Qty.	Points	Total Points	Total Additionl Cost	Details
Administrative Amendment	5591	IND20160001	1	1	1	$ 285.00	
Minor Amendment				4	0	$ -	
Applicability Request				10	0	$ -	
Moderate Amendment				15	0	$ -	
Major Amendment	6248, 6305	IND20180001, IND20190001	2	25	50	$ 14,250.00	
Individual State Permit (not reissuance)				50	0	$ -	
Individual Part 70 Permit (not reissuance)				75	0	$ -	
Additional Points							
Modeling Review	6248	IND20180001	2	15	30	$ 8,550.00	
BACT Review				15	0	$ -	
LAER Review				15	0	$ -	
CAA section 110(a)(2)(D)(i)(I) Review (i.e., Transport Rule/CAIR/CSAPR)				10	0	$ -	
Part 75 CEM analysis				10	0	$ -	
NSPS Review	6248	IND20180001	1	10	10	$ 2,850.00	
NESHAP Review	6248	IND20180001	1	10	10	$ 2,850.00	
Case-by-case MACT Review				20	0	$ -	
Netting				10	0	$ -	
Limits to remain below threshold	6248	IND20180001	1	10	10	$ 2,850.00	
Plantwide Applicability Limit (PAL)				20	0	$ -	
AERA review	6248	IND20180001	2	15	30	$ 8,550.00	
Variance request under 7000.7000				35	0	$ -	
Confidentiality request under 7000.1300	6248	IND20180001	1	2	2	$ 570.00	
EAW review					0		
Part 4410.4300, subparts 18, item A; and 29				15	0	$ -	
Part 4410.4300, subparts 8, items A & B; 10, items A to C; 16, items A & D; 17, items A to C & E to G; and 18, items B & C				35	0	$ -	
Part 4410.4300, subparts 4; 5 items A & B; 13; 15; 16, items B & C; and 17 item D				70	0	$ -	
				Add'l Points	92		

NOTES:

Additional points assessed for NSPS subpart IIII review and limits to remian below PSD and Part 70 review.

Total Additional Fee is $26,220.00

(DQ Points)

Attachment 4. Administrative Order

MINNESOTA POLLUTION
NNNB CONTROL AGENCY

520 Lafayette Road North | St. Paul, Minnesota SS155-4194 | 651-296-6300
800-657-3864 | Use your preferred relay service) info.pea@state.mn.us Equal Opportunity Employer

January 17, 2020

CERTIFIED MAIL NO. 7007 3020 0000 0965 4454
RETURN RECEIPT REQUESTED

Junya Inoue, President
Water Gremlin Company
4400 Otter Lake Road
White Bear Township, MN 55110-3757

RE: Administrative Order
Water Gremlin Co, White Bear Township, Ramsey County

Dear Mr. Junya Inoue:

The enclosed Administrative Order (Order) is being issued by the Minnesota Pollution Control Agency (MPCA) to Water Gremlin Company.

The Order requires Water Gremlin Company to complete the specified actions listed in the Order by specified dates.

Please contact Jennifer Carlson at 651-757-2538 or at Jennifer.M.Carlson@state.mn.us, if you have any questions regarding this Order.

Sincerely,

Jeff J

This document has been electronically signed.

Jeff J. Smith
Division Director
Industrial Division

JJS/JC:se

Enclosure

cc: Colin O'Donovan, Attorney General's Office (w/enclosure)
Peter Surdo, Attorney General's Office (w/enclosure)
Leslie Fredrickson, Attorney, MPCA (w/enclosure)
Deb Klooz, MPCA (w/enclosure)
Jennifer Carlson, MPCA (w/enclosure)
Cory Boeck, MPCA (w/enclosure)
Brent Rohne, MPCA (w/enclosure)

Sarah Kilgriff, MPCA (w/enclosure)
Ralph Pribble, MPCA (w/enclosure)
Activity ID NON20200001 @ 2005

STATE OF MINNESOTA

Minnesota Pollution Control Agency

In the Matter of: ADMINISTRATIVE ORDER

Water Gremlin Company

This Administrative Order (Order) is issued by the Minnesota Pollution Control Agency (MPCA) to Water Gremlin Company (Water Gremlin) pursuant to Minn. Stat. § 116.07, subd. 9, and Minn. Stat. § 115.071, subd. 1.

FINDINGS OF FACTS

1. Water Gremlin is a domestic corporation that operates a lead metal fabrication facility (Facility) located at 4400 Otter Lake Road, White Bear Township, Ramsey County, Minnesota.
2. On August 22, 2019, the MPCA issued an Administrative Order (the August 22, 2019 Order) to Water Gremlin.
3. The August 22, 2019 Order required Water Gremlin to immediately cease all VOC coating operations, and to submit written documentation that it had done so. Water Gremlin confirmed in writing that it ceased operating its coaters upon receiving the Order that same day.
4. The August 22, 2019 Order prohibited Water Gremlin from operating VOC coating operations until corrective measures to prevent additional tDCE emissions from migrating from the coating rooms to the soil vapor beneath the Facility had been approved by the MPCA, completed, and determined to be effective.
5. On August 22, 2019, Water Gremlin proposed some corrective measures, such as lowering the vents inside the VOC coater enclosures to better capture the heavier-than-air tDCE emissions, converting some VOC coaters to water based coating, removing some VOC coaters from its Facility, sealing the coating room floors, and installing floor pans beneath the VOC coaters.
6. On August 27, 2019, Water Gremlin provided a diagram of stainless steel floor pans that it proposed to install beneath the VOC coaters at its Facility. Water Gremlin stated that the floor pans would eliminate the exposure of the concrete floor beneath the VOC coaters to tDCE vapors.
7. On August 27, 2019, MPCA staff visited the Facility. The MPCA confirmed that Water Gremlin had completed the proposed lowering of the air vents inside the VOC coater enclosures toward the floor, and constructed an additional lowered air vent in the middle of the main coating room. The MPCA also confirmed that Water Gremlin was not operating the VOC coaters, and was only operating the water-based coaters. Water Gremlin also stated during this inspection that it would like to convert more of the VOC coaters to water based coaters.
8. On August 30, 2019, the MPCA sent a letter stating that Water Gremlin's proposed corrective measures did not contain enough information for the MPCA to evaluate the proposed corrective measures and requested a Work Plan that included additional information.

9. The MPCA also required Water Gremlin to conduct additional soil vapor sampling near its property line, in order to determine if tDCE in the soil vapor was migrating off-site at a concentration above 33 times (33X) the residential intrusion screening values (ISVs). Concentrations above this value would require Water Gremlin to further define the vapor intrusion area of concern (concentrations above 33X residential ISVs) offsite into the residential neighborhood.
10. Water Gremlin completed the property line soil vapor sampling on August 28, 2019, and the MPCA received the analytical results of the soil vapor samples on August 29, 2019. No VOCs were detected above 33X residential ISVs in the soil vapor samples collected at the property line. Therefore, further definition of the vapor intrusion area of concern beyond the Water Gremlin property line to the west, north, and northeast, is not required at this time.
11. On August 31, 2019, Water Gremlin sent a letter stating that it installed and was operating a vapor mitigation system to address the vapor intrusion risk identified in the soil vapor beneath the building, and that it was capable of capturing tDCE emissions that might migrate from the VOC coating operations to the soil vapor beneath the Facility. Water Gremlin's environmental consultant, Wenck, also installed a carbon filtration system on the mitigation system air discharge to treat the soil vapors prior to discharging them. Wenck provides monitoring data to the MPCA on an MPCA-approved schedule.
12. On September 4, 2019, MPCA staff accompanied Minnesota Department of Health (MDH) staff to the Facility in order to conduct a visual inspection of the stainless steel floor pans and verify that VOC coating operations were not occurring.
13. During this visit, MPCA staff identified an accumulation of reddish material on the concrete floor beneath a VOC coater. Later that same day, the MPCA notified Water Gremlin that it must immediately contain and recover all of the spilled material under the VOC coating equipment, notify the Minnesota Duty Officer of the spill, notify the MPCA when this was completed, and document how the spilled material was managed.
14. On September 5, 2019, Water Gremlin notified the MPCA that it was cleaning up the spill, and that it was an accumulation of dried resins resulting from operation and maintenance over a long period, perhaps 15 years, and that it would be disposed of as hazardous waste. The MPCA required Water Gremlin to investigate if similar spills had occurred beneath other coaters, and to submit photographs of the spills before, and after cleanup.
15. On September 6, 2019, MPCA staff attended a Ramsey County hazardous waste inspection of the Facility. During this inspection, it was confirmed that Water Gremlin had cleaned up the spill material beneath several VOC coaters and was in the process of re-painting the floors beneath those coaters. During this inspection, it was discovered that the VOC solvent distiller in the chemical storage room had TCE and tDCE solvent liquid in the spill pan. Additionally, the solid hazardous waste barrel compactor had residual dried TCE and tDCE solvent material on the floor. Water Gremlin stated that historic VOC solvent spills have occurred utilizing its procedure to fill and empty the VOC distillation unit.
16. On September 9, 2019, Water Gremlin supplied photographic documentation of the clean-up and confirmed that seven VOC coaters had TCE and tDCE contaminated coating material spilled onto the concrete floor beneath the coaters.
17. That same day, Water Gremlin notified the MPCA that it began installing the stainless steel floor pans beneath VOC coaters at its Facility.

18. Also that same day, Water Gremlin submitted a proposed Work Plan, subject to MPCA approval, outlining proposed and completed corrective measures.

19. On September 12, 2019, MPCA staff attended a follow-up Ramsey County hazardous waste inspection at the Facility. This inspection related to, among other things, the spills under the VOC coaters and engineering problems that led to spills of hazardous waste in the coating rooms and chemical storage rooms. During the course of this meeting, Water Gremlin informed MPCA that the main coating room doors had been removed so that mitigation equipment could enter the Facility, and that the negative pressure alarm system was not alerting as expected. Water Gremlin is required under its current air permit to maintain the coating rooms under negative pressure, to ensure that all VOC emissions are routed to the control equipment. If the room was to become positively pressurized, an alarm would sound and Water Gremlin would have to correct whatever caused the positive pressure. Water Gremlin stated that the negative pressure alarm only sounded twice when the main coating room doors were removed. This means, Water Gremlin explained, that even with the doors removed, the main coating room maintains negative pressure, and opening and closing the doors on a regular basis does not cause the room to become positively pressurized.

20. After reviewing the Work Plan and visiting the Facility, the MPCA determined that Water Gremlin's proposed corrective measures were inadequate and immediately began drafting corrective measures that would be required if VOC coating operations were allowed to resume.

21. On October 7, 2019, seven additional sub-slab samples were collected from the main coating room. The mitigation system had been running for 37 days and tDCE had not been used at the Facility since August 22, 2019. Concentrations of tDCE in six of the sub-slab samples were above the industrial ISV and one of the sub-slap samples was above the 33X industrial ISV. The presence of tDCE in these samples at these elevated levels after 37 days of mitigation, and no active use of tDCE material at the Facility, is indicative of an ongoing source of tDCE in the subsurface.

22. The MPCA has also received the analytical results from the ongoing vapor mitigation system discharge monitoring. The analytical results indicate that the carbon filters are treating the majority of both TCE and tDCE emissions prior to being discharged to the atmosphere. All VOC emissions at the Facility, including VOC emissions from the vapor mitigation system, will be evaluated as part of the air toxics analysis that is part of the review of Water Gremlin's the air permit application.

23. On October 15, 2019, the MPCA received groundwater and soil sampling results for the samples collected beneath the Facility on October 4 and 7, 2019. These results demonstrate that both TCE and tDCE have contaminated the groundwater and soil beneath the Facility. The detections of tDCE in the soil and groundwater beneath the main coating room are indicative of a direct release of tDCE to the subsurface.

24. On September 25, 2019, and October 3, 2019, Water Gremlin conducted total enclosure testing on its three coating rooms in order to determine if its current ventilation system is adequate at maintaining negative air pressure, to ensure that all of the VOC emissions generated from VOC-coating operations will be captured and routed to the control equipment. MPCA staff witnessed the testing.

25. On October 8, 2019, Water Gremlin submitted the test report. After reviewing the report the MPCA requested additional information and on October 10, 2019, Water Gremlin submitted a revised report.

26. On October 30, 2019, the MPCA issued a Notice of Permanent Total Enclosure Verification Acceptance, stating that after review the three coating rooms passed the permanent total enclosure test.

27. On October 21, 2019, MPCA staff conducted an inspection at the Facility and observed that the chemical storage room and main coating room floors had been sealed, and that the stainless steel floor pans beneath the coaters in the main coating room had been sealed to the floor along the horizontal seam. During this inspection MPCA staff also observed two areas on the sealed floor where the sealant had flaked away, revealing the concrete floor beneath it. Water Gremlin stated that this had occurred due to a heavy piece of equipment falling onto the floor anrJ that it was exploring nptinn.s tn repair it.

28. On October 25, 2019, Water Gremlin submitted an analytical report for the water-based coating material. After review, the MPCA determined that the water-based coating material did not contain any VOCs above the detection level.

29. On November 7, 2019, MPCA staff conducted a follow-up inspection at the Facility and observed that the other two coating room floors had been sealed, and that the stainless steel floor pans beneath the coaters had been sealed to the floor along the horizontal seam. During this inspection, MPCA staff visually inspected the floors of all three coating rooms, and did not observe any degradation of the floor sealant. Water Gremlin stated that the previous areas of degradation had been professionally patched. MPCA staff also visually inspected each coater to determine if the coater was enclosed on all sides. MPCA staff documented coaters that still utilized the concrete wall as part of the coater enclosure. Water Gremlin stated that they were still in the process of constructing these additional enclosure walls.

30. On January 3, 2020, Water Gremlin notified the MPCA that it is no longer pursuing the use of the adsorber air pollution control equipment. Water Gremlin stated that it believes that it has exhausted any potential modifications or repairs and would result in recovery of the VOC solvent. As part of this change the bypass stacks will also be removed, the structure of the fluidized bed solvent recovery unit will remain in place but the adsorbing beads will be removed to minimize the pressure drop across the unit and reduce energy usage. Water Gremlin will verify that exit temperatures and flow rates are unchanged, or advise of new values, using the stack testing reference methods. Water Gremlin will submit a revised air permit application to incorporate these changes.

31. Water Gremlin will prepare and submit in January a revised air permit application to incorporate this change and to remove any references to the fluidized bed solvent recovery unit. The application will request a limit of 90 tons/year for VOC, without operation of the fluidized bed solvent recovery unit. That will be accomplished by restricting VOC usage to meet the 90 tons/year VOC limit without depending on any control equipment.

32. If at any time the MPCA determines that VOC coating operations are causing releases to the soil vapor, soil, or groundwater at the Facility, the MPCA reserves the right to prohibit Water Gremlin from continuing its VOC coating operations.

CONCLUSIONS

33. The MPCA has reviewed all available evidence, and has determined that given the location of the spills, in conjunction with the operation of the negative pressure alarm, the most likely cause of the contaminated soil vapor, soil, and groundwater beneath the Facility was indeed the TCE/tDCE spill material that was discovered beneath several VOC coating machines in September 2019, as well as past TCE/tDCE spills in the chemical storage room.
34. Water Gremlin's proposed corrective measures in the Work Plan were not sufficient to prevent additional contamination of the soil vapor, soil, and groundwater beneath the Facility.
35. The MPCA concludes that if Water Gremlin implements the corrective measures listed below in paragraphs 36-65, including measurements to confirm their effectiveness, as well as abide by all other environmental regulations, including hazardous waste regulations, additional contamination of the soil vapor, soil, and groundwater beneath the Facility will be unlikely.

ORDER

The MPCA will allow the Regulated Party to resume VOC coating operations subject to the following conditions. Failure to meet any of the conditions below will require Water Gremlin to cease VOC coating operations until approval by the MPCA.

Sealing the Floors with the Retro-Coat Vapor Intrusion Coating System

36. Prior to resuming any VOC coating operations, Water Gremlin shall seal the floors of all three coating rooms and the chemical storage room with the Retro-Coat Vapor Intrusion Coating System. The entire floor around the coaters, of each coating room, shall be sealed, with the seams of the stainless steel floor pans sealed to the floor with 3M Scotch-Weld Epoxy Adhesive DP100 Plus. This shall be verified and approved by MPCA staff prior to resuming VOC coating operations.

...THIS REQUIREMENT HAS BEEN COMPLETED.

37. Once each VOC coating operating day, Water Gremlin shall inspect the floor of each coating room to check for degradation of the Retro-Coat Vapor Intrusion Coating System.
    a. If degradation is discovered, Water Gremlin shall immediately resolve the degradation.
    b. If Water Gremlin does not resolve the degradation within 24 hours, Water Gremlin shall immediately cease VOC coating operations in that coating room until the degradation is corrected.
    c. Water Gremlin shall notify the MPCA immediately upon ceasing VOC coating operations due to degradation of the Retro-Coat Vapor Intrusion Coating System.
    d. Water Gremlin shall photograph all degradation areas before and after corrective actions are taken.
38. Water Gremlin shall keep a record of the daily floor inspection, as well as all degradation that is discovered, and all corrective actions taken. Water Gremlin shall submit these records to the MPCA daily, by 4:30 pm every operating day.

Paired Sub-Slab and Indoor Air Testing to Evaluate VOC Releases through the Floor-Slab

39. Prior to resuming any VOC coating operations, Water Gremlin shall conduct paired sub-slab and indoor air testing to establish baseline sub-slab VOC concentrations in the sub-surface in each VOC coating room and chemical storage room. MPCA will use the baseline sub-slab VOC concentrations to compare with future results once VOC coating has resumed to evaluate if VOCs are migrating from the indoor air to the sub-surface through the concrete floor.

    e. Submit a plan, subject to MPCA approval, detailing how and where the paired indoor air and sub-slab samples will be taken, the locations of each coater and chemical storage room, the laboratory that will analyze the samples, and the quickest TAT allowed by the laboratory. Upon MPCA approval of the plan the Regulated Party shall follow the approved plan.

    f. All existing sub-slab locations, or MPCA-approved relocated sub-slab sample locations, in each coating room and chemical storage room, shall be sampled along with paired indoor samples at each sub-slab location and an outdoor air sample. The outdoor air sample shall be taken west of the main coating room.

    g. The paired indoor air and sub-slab samples shall be collected and analyzed in accordance with the MPCA's Remediation Program's Best Management Practices (https://www.pca.state.mn.us/waste/vapor—intrusion-best-management-practices-0). Pressure differential measurements using a calibrated micro manometer shall be collected and reported to the MPCA at each sub-slab sample location during all sampling events.

    h. All indoor air, sub-slab, and outdoor air samples shall be collected in canisters that have been individually certified clean by the laboratory and analyzed for VOCs using EPA method TO-15 (MN List).

    i. The paired indoor air and sub-slab sample results shall be sent to the MPCA directly from the laboratory along with associated pressure differential readings as soon as possible following analysis.

40. The MPCA has grouped the VOC coaters and sub-slab points as follows. If the listed sub-slab sampling points no longer exist, new sub-slab sampling points will need to be installed within immediate proximity of the associated coaters within each coating group. All new sub-slab locations must be submitted to the MPCA for review and approval prior to sample collection. Water Gremlin is prohibited from moving these coaters, prior to receiving written approval from the MPCA. Water Gremlin is prohibited from operating VOC coaters that are not in these groups, prior to receiving written approval from the MPCA. Upon receiving written approval from the MPCA, all of the requirements in this Order apply to those VOC coaters:

    j. VOC Coater Group 1 (CG-1)
        i. Coater 25 (CTR-25)
        ii. Coater 28 (CTR-28)
        iii. Sub-slab point 11 (SS-11)

    k. VOC Coater Group 2 (CG-2)
        i. Coater 12 (CTR-12)
        ii. Coater 17 (CTR-17)

iii. Sub-slab point 12 (SS-12)

l. VOC Coater Group 3 (CG-3)
   i. Coater 21 (CTR-21)
   ii. Coater 22 (CTR-22)
   iii. SS-12
   iv. Sub-slab point 13 (SS-13)

m. VOC Coater Group 4 (CG-4)
   i. Coater 16 (CTR-16)
   ii. Coater 18 (CTR-18)
   iii. Coater 19 (CTR-19)
   iv. Coater 20 (CTR-20)
   v. Sub-slab point 14 (SS-14)

n. VOC Coater Group 5 (CG-5)
   i. Coater 9 (CTR-9)
   ii. Coater 10 (CTR-10)
   iii. Coater 15 (CTR-15)
   iv. Sub-slab point 15 (SS-15)

o. VOC Coater Group 6 (CG-6)
   i. Coater 8 (CTR-8)
   ii. Coater 23 (CTR-23)
   iii. Coater 24 (CTR-24)
   iv. Coater 26 (CTR-26)
   v. Sub-slab 19 (SS-19)
   vi. Sub-slab 20 (SS-20)

p. VOC Coater Group 7 (CG-7)
   i. Coater 4 (CTR-4)
   ii. Coater 27 (CTR-27)
   iii. Sub-slab 10 (SS-10)

41. Water Gremlin shall restrict VOC coating operations so that one VOC Coater Group is restarted at a time.

42. Within 12 hours of restarting any of the VOC coaters in a VOC Coater Group, for each of the VOC Coater Groups, Water Gremlin shall conduct paired indoor air and sub-slab sampling. Water Gremlin shall operate at least one VOC coater in each VOC Coater Group for a minimum of 6 hours prior to conducting the paired indoor air and sub-slab sampling. At least one VOC coater in the VOC Coater Group shall be operating during the paired indoor air and sub-slab sampling.

    q. All of the sub-slab locations associated with the VOC Coater Groups in operation shall be sampled along with paired indoor samples at the same sub-slab locations.

    r. The paired indoor air and sub-slab samples shall be taken in accordance with the MPCA's Remediation Program's Best Management Practices (https://www.pca.state.mn. us/waste/vapor-int rusion-best-manaReinent-practices-0). Pressure differential measurements using a calibrated micro manometer shall be collected and reported at each sub-slab sample location during all sampling events.

    5. The results of the paired indoor air and sub-slab sample analytical analysis shall be expedited as quickly as possible, with a turnaround time (TAT) as quickly the laboratory allows, not to exceed three days.

    t. The paired indoor air and sub-slab shall be analyzed for VOCs using EPA method TO-15 (MN List) and individually certified canisters.

    u. The paired indoor air and sub-slab sample results shall be sent to the MPCA directly from the laboratory along with associated pressure differential readings as soon as possible following analysis.

    v. MPCA will evaluate the laboratory analytical data in comparison to the baseline levels and pressure differential readings to determine if vapors are migrating through the floor slab and into the sub-surface.

    w. If MPCA determines that a significant release is occurring through the floor slab and into the sub-surface based on the data provided, MPCA will notify Water Gremlin to cease operating that VOC Coater Group. Upon receiving this notification, Water Gremlin shall immediately cease operating that VOC Coater Group, and notify the MPCA that it has done so.

        i. The MPCA will determine what, if any, actions Water Gremlin must take in order to re-start the affected VOC Coater Group, and will notify Water Gremlin in writing of these actions.

        ii. Water Gremlin is prohibited from restarting the affected VOC Coater Group until it has received written permission from the MPCA.

    x. Without waiting for notification from the MPCA, if at any time the indoor air samples exceed OSHA's Permissible Exposure Limits (PELs), Water Gremlin shall immediately cease all VOC coating operations in that coating room. Water Gremlin shall notify the MPCA that it has ceased operations in the affected coating room, and provide a report identifying the cause of the exceedance.

43. Water Gremlin shall not operate additional VOC Coater Groups until the paired sub-slab and indoor air sampling has been conducted for the currently operating VOC Coater Group.

44. Upon resuming any VOC Coating Groups, Water Gremlin shall conduct paired indoor air and sub-slab sampling every seven days, for the entire Facility.

y. All existing sub-slab locations in each coating room shall be sampled along with paired indoor samples at each sub-slab location.

z. The paired indoor air and sub-slab samples shall be taken in accordance with the MPCA's Remediation Program's Best Management Practices (https://www.pca.state.mn.us/waste/vapor-intrusion-best-management-practices-0). Pressure differential measurements using a calibrated micro manometer shall be collected and reported at each sub-slab sample location during all sampling events.

aa. The results of the paired indoor air and sub-slab sample analytical analysis shall be expedited as quickly as possible, with a turnaround time (TAT) as quickly the laboratory allows.

bb. The paired indoor air and sub-slab shall be analyzed for VOCs using EPA method TO-15 (MN List) and individually certified canisters.

cc. The paired indoor air and sub-slab sample results shall be sent to the MPCA directly from the laboratory along with associated pressure differential readings as soon as possible following analysis.

dd. MPCA will evaluate the laboratory analytical data in comparison to the baseline levels and pressure differential readings to determine if vapors are migrating through the floor slab and into the sub-surface.

ee. If MPCA determines that a significant release is occurring through the floor slab and into the sub-surface based on the data provided, MPCA will notify Water Gremlin to cease operating that VOC Coater Group. Upon receiving this notification, Water Gremlin shall immediately cease operating that VOC Coater Group, and notify the MPCA that it has done so.

i. The MPCA will determine what, if any, actions Water Gremlin must take in order to re-start the affected VOC Coater Group, and will notify Water Gremlin in writing of these actions.

ii. Water Gremlin is prohibited from restarting the affected VOC Coater Group until it has received written permission from the MPCA.

ff. Without waiting for notification from the MPCA, if at any time the indoor air samples exceed OSHA's Permissible Exposure Limits (PELs), Water Gremlin shall immediately cease VOC coating operations in that coating room. Water Gremlin shall notify the MPCA that it has ceased operations in the affected coating room, and provide a report identifying the cause of the exceedance.

Total Enclosure Test

45. Prior to resuming any VOC coating operations, Water Gremlin shall submit the permanent total enclosure test report that demonstrates that all of the coating rooms are indeed a permanent total enclosure.

...THIS REQUIREMENT HAS BEEN COMPLETED.

46. After resuming VOC coating operations, Water Gremlin shall observe and record the pressure drop, door status, and verify the alarm system is operating with a set point at a minimum pressure drop of 0.007 inches of water, for each coating room once each VOC coater operating day.

gg. If the pressure drop across any coating room door is less than 0.007 inches of water, Water Gremlin shall immediately take action to evaluate the reasons for the deviation, and correct the deviation.

hh. If the door status is different than the permanent total enclosure test report approved door status, for each coating room, Water Gremlin shall immediately take action to evaluate the reasons for the deviation, and correct the deviation.

ii. The current alarm system for each coating room door must be set to a minimum pressure drop of 0.007 inches of water.

jj. If the alarm system sounds, indicating that the pressure drop at a coating room door has fallen below 0.007 inches of water, Water Gremlin shall immediately cease operating all VOC coaters in the affected coating room. Water Gremlin shall immediately take action to evaluate the reason for the alarm system sounding, and correct the issue.

kk. Failure to operate within the MPCA-approved alarm system minimum pressure drop and door status violates this order and is sufficient basis for the MPCA to require Water Gremlin to cease VOC-coating operations in the affected coating room.

ll. If the pressure drop readings, or position of the coating room doors show any deviations that demonstrate that the coating rooms are not continuously operating as permanent total enclosures, Water Gremlin shall immediately notify the MPCA.

47. After resuming VOC coating operations, Water Gremlin shall submit a weekly report of the pressure drop readings, the door status, and daily alarm verification, for each coating room. The report must include any deviation from the approved minimum pressure drop, and/or door status, the actions taken to evaluate the reasons for the deviation, and the corrective actions taken to resolve the deviations.

mm. Water Gremlin shall submit the weekly report to the MPCA by 4:30 pm every Friday.

nn. If the MPCA determines that any of the deviations are significant, MPCA will notify Water Gremlin to cease all VOC coating operations in that affected coating room. Upon receiving this notification, Water Gremlin shall immediately cease all VOC coating operations in the affected coating room, and notify the MPCA that is has done so.

i. The MPCA will determine what, if any, actions Water Gremlin must take in order to re-start the affected VOC Coater Group, and will notify Water Gremlin in writing of these actions.

ii. Water Gremlin is prohibited from restarting the affected VOC Coater Group until it has received written permission from the MPCA.

<u>Gas Chromatograph Test on Water Based Coaters</u>

48. Within 14 days of resuming VOC coating operations, Water Gremlin shall analyze representative water-based coaters using gas chromatography to determine if there are any regulated pollutants being emitted from the water-based coating operations. The test shall not include material from VOC coaters and must include water-based coaters representing each of the various forms of coating application techniques (dipping, dripping, and spraying).

...THIS REQUIREMENT HAS BEEN COMPLETED.

49. Within 30 days of resuming VOC coating operations, Water Gremlin shall submit the results of the gas chromatograph analysis of the water-based coaters to the MPCA directly from the laboratory performing the analysis. The results must include a speciation of any VOCs identified in the water coating liquid.

VOC Emission Venting

50. Immediately upon resuming VOC coating operations, Water Gremlin shall vent all VOC emissions from the coating rooms to the carbon adsorber stack (STRU 3).

51. Immediately upon resuming VOC coating operations, Water Gremlin shall operate the ventilation system associated with the carbon adsorber stack (STRU 3) at all times that any VOC coating operations are operating. Water Gremlin is prohibited from exhausting VOC emissions from VOC coating operations through any other point.

VOC Coaters and Verification by MPCA

52. Each VOC coater must be inspected by the MPCA prior to it resuming VOC coating operations.

53. Each VOC coater must:

    oo. Either be a "table top" coater that does not touch the ground; or

    pp. Be fitted with a stainless steel floor pan; and

    qq. Be enclosed on all sides, so that concrete walls are not utilized as part of the coater enclosure, and the tops of the coaters are enclosed.

VOC 365-day Rolling Sum and Solvent Usage Records

54. Water Gremlin shall limit VOC emissions to less than or equal to 90 tons per year as a 365-day rolling sum.

55. On each day of operation, Water Gremlin shall calculate the VOC 365-day rolling sum.

    rr. This calculation shall be based on daily VOC solvent usage, which must include purchased solvent as well as VOC material that is shipped off-site as waste, and an MPCA approved allowance for VOC emission loss due to material handling, and VOCs contained in water based coatings.

    ss. If Water Gremlin wishes to get credit for VOC shipped off-site as waste, this must be done on a daily basis by measuring and recording the amount of VOC material shipped off-site as waste every day and subtracting this amount from the daily VOC usage records for the same day.

    tt. Water Gremlin shall include VOC emissions from coating operations, from the mitigation system, and from any other source at its Facility.

56. Water Gremlin shall submit daily VOC solvent usage records, daily water based coating usage records, daily VOC waste records, daily VOC emission loss records, and the VOC 365-day rolling sum, as an unlocked editable excel spreadsheet, to the MPCA by 4:30 pm each day following an operating day.

VOC Emission Monitor

57. Water Gremlin shall hire a third party company to operate a continuous VOC emission monitor at the carbon adsorber stack (STRU 3) anytime that VOC-coating operations are occurring.
58. The third party company shall submit the continuous VOC emission monitor results from STRU 3 daily to the MPCA, for the previous operating day.

VOC Ambient Monitoring

59. Water Gremlin shall continue to conduct VOC ambient monitoring every one in three days at the approved monitor locations, as outline in the March 1, 2019 Agreement.
60. Water Gremlin shall continue to maintain a 48 hour turnaround time (TAT) for the results of the VOC ambient monitoring analytical analysis.
    a. The VOC ambient monitoring results shall include the full TO-15 list.
    b. The VOC ambient monitoring results shall be sent to the MPCA as soon as possible after analysis and directly from the laboratory.

Modeling

61. Within 30 days of resuming VOC coating operations, Water Gremlin shall submit the requested information needed to conduct modeling of all emissions from its Facility, including all of the emissions from the mitigation stack.
    a. The MPCA will conduct the modeling, and will make decisions based on this information. If the MPCA determines that Water Gremlin requires additional operating restrictions, or other requirements, the Regulated Party must comply immediately.

Air Permit Application

62. On August 30, 2019, Water Gremlin submitted an air permit application supplement which included a proposed total enclosure test plan. This permit application supplement states that some coating units use spray application techniques for coating, however, the application supplement emissions calculations did not include a description of particulate emissions (such as rosin solids) from overspray. Within 30 days of resuming VOC coating operations, Water Gremlin shall submit a permit application supplement that includes a complete description of these spray-coating operations, including spray-coating emissions from both VOC and water-based coating operations.
    uu. If the water-based coating material is not applied by spraying the permit application supplement must specifically state so.
    vv. The air permit application supplement shall include emissions calculations describing the potential to emit for particulate matter (PM), particulate matter with an aerodynamic diameter less than 10 micrometers (PM10), and particulate matter with an aerodynamic diameter less than 2.5 micrometers (PM2.5), from all of the coaters.
63. Within 30 days of resuming VOC coating operations, Water Gremlin shall submit a permit application supplement that includes all of the adsorber and bypass stack changes that will or have occurred at its Facility. The application must include a detailed description of how the VOC and water-based solvent are handled at the facility at every step, from purchasing to disposal as a waste. It must include any onsite conditioning or reuse.

64. Water Gremlin is prohibited from implementing changes at the Facility, including modifying additional VOC coaters to water-based coaters, that have not been fully described in a supplement to the August 30, 2019 air permit amendment application that has been reviewed and accepted in writing by the MPCA. The MPCA will accept an air permit amendment application in writing if it is complete and if the technical questions have been answered in enough detail to draft all of the air permit conditions for the units affected by the changes.

Compliance With Applicable Laws and Obligations

65. Water Gremlin shall operate in compliance with all applicable federal, state, and local laws and regulations, including without limitation in Water Gremlin's undertaking actions to comply with this Order. Except when the MPCA has specifically authorized a different compliance method, Water Gremlin must also comply with all applicable permits, orders, stipulation agreements, and schedules of compliance.

NOW, THEREFORE, IT IS ORDERED:

RESERVATION OE AUTHORITY

Nothing in this Order shall prevent the MPCA from taking action to enforce the requirements of this Order, or from requiring additional action by the Regulated Party if necessary to ensure compliance with MPCA rules and statutes. In addition, the issuance of this Order is not an exclusive action or remedy by the MPCA, and it does not limit in any way the MPCA's authority to bring an enforcement action against or to seek and collect penalties from the Regulated Party. This Order is issued to require immediate action to correct violations, and it does not limit or preclude any other action, including the issuance of further orders, pursuit of injunctive or other relief, or commencement of enforcement actions and collection of penalties.

This Order is effective upon the date that it is signed by the MPCA Commissioner or designee.

IT IS SO ORDERED.

STATE OF MINNESOTA
POLLUTION CONTROL AGENCY

" " .z9

Date signed (Month day, year)

Laura Bishop
Commissioner

Attachment 5. Stipulation Agreement

•§(MINNESOTA POLLUTION
N N N N CONTROL AGENCY

520 Lafayette Road North | St. Paul, Minnesota SSJ 55-4J 94 | 651-296-6300

800-657—3864 | Use your preferred relay service | info.pea@state.mn.us | Equal Opportunity Employer

March 1, 2019

CERTIFIED MAIL NO. 7007 3020 0000 0964 1362
RETURN RECEIPT REQUESTED

Junya Inoue, President
Water Gremlin Company
4400 Otter Lake Rd
White Bear Township, MN 55110

RE: Executed Stipulation Agreement

Dear Mr. Junya Inoue:

Enclosed is your signed copy of the executed Stipulation Agreement (Agreement) that was signed by the Minnesota Pollution Control Agency (MPCA) Commissioner.

The date upon which the Agreement was executed by the Commissioner or his designee is the effective date of the Agreement.

Water Gremlin Company (Regulated Party) is reminded that the $4,500,000.00 portion of the civil penalty is due on the date listed in the enclosed invoice. Payment should be made by check payable to the Minnesota Pollution Control Agency, and mailed to MPCA, P.O. Box 64893, St. Paul, Minnesota, S5164-0893. To make an electronic péyment, contact MPCA Fiscal Services at 651-757-2182.

As indicated in the Agreement, communications between the Regulated Party and the MPCA concerning the terms and conditions of the Agreement shall be directed to the MPCA Case Contact, Jennifer Carlson, 651-757-2538 or Jennifer.m.carlson@state.mn.us. Communications related to the Supplemental Environmental Projects in the Agreement shall be directed to Sarah Kilgriff, 651-757-2492 or sarah.kileriff@state.mn.us

Thank you for your cooperation in this matter.

Sincerely,

Jennifer

This document has been electronically signed.

Jennifer Carlson
Environmental Specialist 4
Land & Air Compliance Section

JMC/SK:ss

Enclosure

cc: See page 2.

t-enf-iii- l4e • 121 141 17

cc: Colin O'Donovan, Attorney General's Office (w/enclosure)
Leslie Fredrickson, MPCA (w/enclosure)
Cory Boeck, MPCA (w/enclosure)
Ralph Pribble, MPCA (w/enclosure)

STATE OF MINNESOTA

MINNESOTA POLLUTION CONTROL AGENCY

IN THE MATTER OF: Water Gremlin Company STIPULATION AGREEMENT

Part 1. RAR7/ES.

This Stipulation Agreement (Agreement) applies to and is binding upon the following parties:

a. Water Gremlin Company (Regulated Party); and

b. The Minnesota Pollution Control Agency (MPCA), which is authorized to enter into this Agreement under Minn. Stat. chs. 115 and 116.

Unless specified otherwise in this Agreement, where this Agreement identifies actions to be taken by the MPCA, the Commissioner or the Commissioner's designees shall act on the MPCA's behalf.

Part 2. ***PURROSE AND SCORE OF STIPULATION AGREEMENT.***

The purpose of this Agreement is to resolve the alleged violations set out in Part 6 of this Agreement by specifying actions the Regulated Party agrees to undertake. By entering into this Agreement, the Regulated Party is settling a disputed matter between itself and the MPCA and does not admit that the alleged violations set out in Part 6 of this Agreement occurred. However, the Regulated Party agrees that the MPCA may rely upon the alleged violations set out in Part 6 as provided in Part 13 of this Agreement. Except for the purposes of implementing and enforcing this Agreement, nothing in this Agreement constitutes an admission by any Party, or creates rights, substantive or procedural, that can be asserted or enforced with respect to any claim of or legal action brought by a person who is not a party to this Agreement. All citations are to the latest codification of the cited material unless otherwise indicated.

Part 3. ***AUTHORITY.***

This Agreement is entered under the authority vested in the MPCA by Minn. Stat. chs. 115 and 116.

Part 4. ***DEFINITIONS.***

Unless otherwise explicitly stated, the definitions in Minn. Stat. chs. 115, 115A, 1158, 115C, 116, 116B and in Minn. R. chs. 7000 to 7151 apply, as appropriate, to the terms used in this Agreement.

Part 5. ***BACKGROUND.***

The following is the background of this Agreement:

<u>The Regulated Party omits Hazardous Air Pollutants That Requires It To Obtain An Air Quality Permit</u>.

a. The Regulated Party is a domestic corporation and operates a lead metal fabrication facility located at 4400 Otter Lake Road, White Bear Township, Ramsey County, Minnesota 55110 (Facility). The Regulated Party's Facility fabricates products including fishing sinker weights and lead acid battery terminals. Until January 2019, the Regulated Party used a solvent, trichloroethylene (TCE), as part of its manufacturing process, and TCE was the largest Hazardous Air Pollutant (HAP) emitted from the Facility.

b. According to the United States Environmental Protection Agency (EPA), TCE exposure can raise a number of health effects, including effects in the developing fetus from both short term and long term exposure.

c. The Minnesota Department of Health (MDH) develops Health-Based Values(HBVs) using available toxicity guidance. HBVs are intentionally very protective and are used to set limits on facility emissions to protect the surrounding community. The current MDH-developed HBV for TCE is 2 micrograms per cubic meter.

d. Because TCE is designated as a volatile organic compound (VOC) and a HAP and can cause significant health effects, the Facility is subject to both state and federal regulations under Minn. R. 7007, et seq. and the Clean Air Act (CAA), 42 U.S.C. § 7401, et seq. Both state and federal law set emission thresholds for various pollutants, including VOC and HAP emissions, that trigger the neCd for an air quality operating permit. Minn. R.7007.0150-.0250; 42 U.S.C. § 7401, et seq. If a facility's potential to emit (PTE) of any regulated pollutant is greater than or equal to the federal Title V, Part 70 major source threshold, the facility will be considered a major source, need a Title V, Part 70 permit (Part 70 permit), and may be subject to operating requirements and regulations under the National Emission Standards for Hazardous Air Pollutants (NESHAP). 42 U.S.C. § 7661c; Minn. R. 7007.0200. For VOC, the federal Part 70 permit threshold is 100 tons per year, and for a single HAP, the federal Part 70 permit threshold is 10 tons per year; any facility emitting greater than or equal to these amounts must obtain a Part 70 permit.

e. To avoid the need to obtain a Part 70 permit and corresponding requirements, a facility may agree to enforceable operating conditions to limit its emissions. Limiting emissions in this manner is referred to as making a facility a "synthetic minor" and the permit is referred to as a "synthetic minor permit." Acceptable synthetic minor limits must include specific emission limits as well as operational or production limits to restrict emissions below the federal threshold. Minn. R.7007.0150-.0250.

f. The Regulated Party agreed to limit its emissions below the federal threshold and applied to the MPCA for a synthetic minor permit. Specifically, the Regulated Party agreed that emissions from all of its battery terminal post coating machines would be routed to a pollution control device, a catalytic oxidation system, which would control at least 95% of TCE emissions from the Regulated Party's coating process. Based on the information and assurances provided by the Regulated Party, the MPCA issued the Regulated Party a synthetic minor permit, air emissions permit No. 12300341-001 (Permit 001), on July 20, 2000.

<u>The Regulated Party Replaces Its Control Equipment, And The MPCA Issues New Permits In 2002 and 2006 Requiring The Regulated Party To Maintain Its Control Equipment at 9556 Efficiency.</u>

g. On July 19, 2001, the Regulated Party submitted to the MPCA an air permit application to replace its older control equipment, a catalytic oxidation system, with a new control equipment unit, a fluidized bed organics recovery system (CE003). The Regulated Party represented to the MPCA that the reason for the replacement was because the catalytic oxidation system was not working as planned. The Regulated Party also represented to the MPCA that the new CE003 would provide a minimum control of 95%, which would limit the Facility's single HAP emissions to less than 9.5 tons per year.

h. On September 25, 2001, the MPCA entered into a Schedule of Compliance (SOC) with the Regulated Party. The SOC allowed the Regulated Party to construct and operate CE003 prior to issuance of an air permit amendment. On December 31, 2002, the MPCA determined that the Regulated Party had completed all the requirements and terminated the SOC.

i. On March 18, 2002, the MPCA issued air emissions permit No. 12300341-002 (Permit 002) to the Regulated Party, which required a VOC and HAP performance test within 30 days of permit issuance to measure the control efficiency of CE003, required operation of CE003 at all times during which the associated emission units were in operation, and required a minimum 95% control efficiency of CE003 to achieve the minimum 95% reduction in VOC and HAP emissions.

j. On April 10, 2002, the Regulated Party conducted a VOC performance test on CE003, which demonstrated an average VOC removal efficiency of 98.9%. On June 12, 2002, the MPCA issued a Notice of Compliance (NOC) to the Regulated Party, which established a desorption temperature limit of greater than or equal to 250 degrees Fahrenheit, an inlet static pressure range of 2.0 to 4.5 inches of water column, and a carrier gas feed pressure of greater than or equal to 22 inches of water column, all to be measured as a 24-hour block average. Those operating parameters were incorporated into Permit 002, page A-8, as requirements, and monitoring and recordkeeping requirements were also added to ensure that the Regulated Party's compliance with those parameters was monitored and recorded.

k. Following the VOC performance test, the Regulated Party reported some issues with CE003 but represented that it had identified the root cause of the issues and had repaired and rebuilt CE003. For example, on May 6, 2002, the MPCA received a breakdown notification from the Regulated Party, stating that CE003 broke down for 11 hours due to shorted wires. On July 19, 2002, the MPCA received a breakdown notification from the Regulated Party, stating that CE003 broke down for 11 hours and 30 minutes due to an oil leak. On August 12, 2002, the MPCA received a breakdown notification from the Regulated Party, stating that CE003 broke down due to a clogged desorber. It is unknown how long CE003 was offline. On August 14, 2002, the MPCA received an email from the Regulated Party, stating that CE003 had a breach in the system allowing oil to penetrate the carbon and therefore rendering the unit inoperable, and that the desorber sections would be removed and repaired. The Regulated Party did not have an estimate when the repairs would be complete, but stated they would continue to update the MPCA.

l. On August 28, 2002, the Regulated Party sent the MPCA a letter from the manufacturer of CE003, which described the root cause analysis of the breakdowns to be due to significant internal condensation in the region between the top of the heated section tube sheet and the seal zone tube sheet. This caused areas of corrosion and erosion allowing an oil breach. The entire heated section needed to be replaced as well as the flange on the seal section, the tube sheet needed a re-design to minimize condensation, and the entire interior of the seal area and top of the heated section needed to be coated with PFA (perfluoroalkoxy copolymer resin). On February 14, 2003, the Regulated Party represented that CE003 had been rebuilt and was operational. The MPCA, therefore, did not require an additional VOC test.

m. On March 29, 2006, the Regulated Party submitted an air permit application to revise current permit requirements to allow more flexibility in changing market conditions, remove obsolete permit requirements, and include pre-approved future coaters to be installed without further MPCA authorization required.

n. On September 22, 2006, the MPCA issued air emissions permit No. 12300341-003 (Permit 003) to the Regulated Party. As with all the previous permits, Permit 003 requires that the Regulated Party comply with permit conditions related to VOC and HAP emissions, so that the Facility's emissions are limited and the Facility is not considered a major source under the Part 70 permit program. In order to limit VOC and HAP emissions, the Regulated Party is required to operate CE003 at all times during which the associated emission units are in operation, and maintain at least a 95%

control efficiency. The MPCA relied on the 2002 VOC performance test and the Regulated Party's maintenance and rebuilding as the justification for CE003's capability to operate above the required 95% control efficiency, and included operating and recordkeeping requirements for CE003 in Permit 003.

o. From July 2010 through December 2018, CE003 experienced multiple shutdowns and breakdowns. Throughout this same period, however, the Regulated Party continued to represent that it had resolved any issues with CE003 and never identified that CE003 was not achieving 95% efficiency as required under Permit 003. On July 23, 2018, the Regulated Party submitted a shutdown/breakdown notification stating that CE003 was being taken down, and that it was operating at a reduced rate of 6 coating machines during this shutdown period.

p. On January 7, 2004, February 13, 2012, and February 7, 2017, the MPCA conducted inspections at the Regulated Party's facility. Nothing was discovered during these inspections to indicate that CE003 was not achieving 95% control efficiency, or that the Regulated Party was emitting excess HAP and VOC emissions. The MPCA relies upon the Regulated Party's records and documentation to ensure compliance with permit conditions.

The Regulated Party Submits An Audit Report In 2018 And The MPCA Issues An Alleged Violation Letter Demanding Additional Information And Data Be Provided.

q. On July 30, 2018, the Regulated Party voluntarily submitted an Environmental Audit Program Report Inventory Submittal (Audit Report) to the MPCA, disclosing several violations of Permit 003.

r. On September 20, 2018, pursuant to the Regulated Party's request, the Regulated Party met with the MPCA to discuss the Audit Report. During the meeting, the Regulated Party stated that CE003 was shut down on July 22, 2018, coating production had been reduced, a new control equipment system was ordered and it would be approximately four months to construction of the new control equipment system, and that the Regulated Party would like to install the new control equipment system as soon as possible. At this meeting the Regulated Party was unable to produce records detailing whether or not CE003 was operating every day prior to July 22, 2018. Also during this meeting, the Regulated Party stated that it had continued to operate associated coating emission units since CE003 was shut down on July 22, 2018, at an unknown reduced rate, even though it understood that it was prohibited from doing so by Permit 003. The Regulated Party did not provide emissions calculations at this meeting and the MPCA demanded the Regulated Party provide additional information. On September 21, 2018, the Regulated Party emailed initial emissions calculations, however the Regulated Party did not identify to the MPCA how these calculations were conducted.

s. On October 23, 2018, the Regulated Party submitted a major air permit amendment application to the MPCA to replace CE003 with a new fluidized activated carbon bed.

t. On November 8, 2018, the MPCA issued the Regulated Party an Alleged Violations Letter (AVL).

u. On November 28, 2018 and December 7, 2018, the Regulated Party responded to the AVL. During review of these responses, the MPCA discovered that the Regulated Party had calculated the Facility's annual TCE emissions using a mass balance calculation since 2009. This calculation revealed that CE003 had not been maintaining 95P«control since at least that time, and that the Facility had emitted more than 100 tons of TCE for calendar year 2018 through November 20, 2018. The Regulated Party's emissions exceeded the federal threshold, qualified it as a major source, prohibited

the Regulated Party from operating without a Part 70 permit, and subjected the Regulated Party to the additional Part 70 requirements such as the Surface Coating of Miscellaneous Metal Parts and Products: NESHAP, Subpart MMMM (NESHAP MMMM). In its responses to the AVL, the Regulated Party also stated that it had worked to repair CE003 since its first malfunction in May 2018, that it would immediately begin evaluating replacement of CE003, that a root cause analysis was completed on CE003, that CE003 began operating again on December 3, 2018, and that new control equipment has been ordered. In its AVL response the Regulated Party did not include records detailing the amount of time CE003 was operating at less than 95% control efficiency, or the date four lead melt pots were constructed. The MPCA and Regulated Party continued discussion regarding the remaining requested records

v. Subsequently, on December 4 and 8, 2018, CE003 had additional system failures.

w. On December 20, 2018, the MPCA met with the Regulated Party to discuss its AVL responses, specifically the Regulated Party's failure to provide information the MPCA had requested. During this meeting, the Regulated Party represented that it would start compiling the previously requested information.

x. Following that meeting, the Regulated Party partially complied with the MPCA's previous records request, and produced some limited calculations and sales data to the MPCA on December 20 and December 26, 2018.

The Regulated Party Submits Data Requested By The MPCA, and The MPCA Requests The Regulated Party Immediately Shut Down Operations.

y. On January 11, 2019, the Regulated Party submitted an updated 12-month rolling average HAP/VOC spreadsheet. This spreadsheet shows an increase in HAP/VOC emissions from coating machine operation since July 2018, even though the Regulated Party had previously stated in the shutdown/breakdown notification submitted to the MPCA on July 23, 2018 that it had reduced coating operations to 6 coating machines, and represented again in the meeting on September 20, 2018 that it had reduced coating operations.

z. The Regulated Party also submitted the monthly emissions calculation for December 2018 required by the NESHAP MMMM, revealing that the Regulated Party exceeded permissible emission limits by 83.56 pounds organic HAP per gallon coating solid amount. The Regulated Party stated that it did not have the necessary records to calculate other monthly values required by the NESHAP MMMM, even though the Regulated Party knew by at least July 2018 that it was subject to this NESHAP requirement. In its air permit application submitted in October 2018, the Regulated Party indicated its intention to limit HAP emissions such that it would be a synthetic minor source under Part 70, and not subject to NESHAP MMMM

aa. On January 14, 2019, the MPCA held a teleconference with the Regulated Party to discuss voluntary cessation of the Facility's coating operations. The Regulated Party agreed and voluntarily ceased operations the same day.

The Regulated Party Agrees To Remove All TCE From Its Facility, To OnlY Use A HAP-Free Solvent, And To Install New Control Equipment.

bb. In January and February 2019, the MPCA and the Regulated Party met numerous times to determine what, if any, safe coating operating scenario exists prior to installation of new control equipment and have conducted modeling to determine the impact TCE emissions may have had on the local community.

cc. On January 23, 2019, the Regulated Party notified the MPCA that it was voluntarily committing to temporarily resume coating operations with a different solvent that does not contain a HAP, called FluoSolv. The primary component of FluoSolv is trans-1,2-dichloroethylene (trans-1,2-DCE), which has a VOC content of 88%. After receiving this information, the MPCA contacted MDH to discuss the new solvent.

dd. On January 30, 2019, MDH sent the MPCA a site-specific risk assessment advice (RAA), stating that MDH has determined a chronic RAA number for trans-1,2-DCE of 70 micrograms per cubic meter. MDH informed the MPCA that no shorter-term guidance is available at this time. After receiving this information from MDH, the MPCA conducted additional modeling to determine if, and at what level, the Regulated Party would be able to resume coating operations utilizing FluoSolv without adversely impacting human health and the environment.

ee. On February 4, 2019, the Regulated Party sent an email to the MPCA stating that it was voluntarily committing to permanently discontinue the use of TCE in its coating operations, and would amend its air permit amendment application to limit solvent usage to a HAP-free solvent.

ff. On February 6, 2019, the Regulated Party confirmed that it had voluntarily removed all remaining TCE solvent from the Facility.

gg. On February 8, 2019, the Regulated Party submitted an updated air permit amendment application to the MPCA, which included emission calculations only from the FluoSolv solvent.

hh. On February 13, 2019, the Regulated Party submitted TCE purchase, waste, and estimated emission records from 2002 to 2008. This submittal did not include TCE re-use records.

Part 6. ***ALLEGED VIOLATIONS.***

The MPCA alleges that the Regulated Party has violated the following requirements of statute, rule, and/or permit condition:

1. AIR EMISSIONS PERMIT NO. 12300341-003, TABLE A: LIMITS AND OTHER REQUIREMENTS, GP001 BATTERY TERMINAL COATERS WITH REWORK TABLES AND ASSOCIATED CONTROL EQUIPMENT, PAGE A-4

   The emission units designated as Future Coater in GP 001 may be installed at any time without prior authorization of or review by the MPCA. Any newly installed emission unit will be subject to all GP001 requirements.

   At such time that any emission unit(s) designated as Future Coater in GP 001 is installed, the owner or operator shall notify the MPCA in the next emissions inventory submittal. Such notification shall constitute all reporting required in connection with installation of the emission unit(s).

   Minn. R. 7019.3020 CALCULATION OF ACTUAL EMISSIONS FOR EMISSION INVENTORY

   A. Emissions from all emissions units shall be reported in the annual emissions inventory report in a format specified by the commissioner. Emissions from insignificant activities listed in part 7007.1300, subpart 2, shall not be reported. Emissions from insignificant activities listed in part 7007.1300, subparts 3 and 4, and conditionally insignificant activities listed in part 7008.4000 shall be reported if the commissioner or owner or operator has determined that emissions from those activities are not insignificant for purposes of permitting under parts 7007.0100 to 7007.1850 or for those activities required to be quantified by a facility issued a capped permit option 1. Notwithstanding the previous sentence, the commissioner may request an inventory of

fugitive emissions from roads and parking lots, defined as insignificant under part 7007.1300, subpart 3, item J, upon determining that emissions from these sources represent a substantial portion of the facility's total emissions.

The Regulated Party replaced three coaters (EU027, EU028, and EU029), and emitted HAP and VOC emissions from four lead melt pots (EU023, EU024, EU025, and EU026) without reporting such activities in past Emission Inventory Reports.

The Regulated Party estimates that EU023, EU024, EU025, and EU026 were constructed in 1991 and have never been reported in any Emissions Inventory Report. The Regulated Party acknowledged in the Audit Report that it failed to report these replaced coaters or emissions from the lead pots in any past Emission Inventory Reports submitted to the MPCA. These have since been determined to be insignificant activities and identified in the Major Amendment application submitted February 8, 2018.

The Regulated Party has also under-reported HAP and VOC emissions from its Facility since at least 2002. MPCA calculations estimate approximately 759 tons of HAP and VOC emissions have not been reported since 2002 as detailed in the table below:

Year	Actual HAP/VOC Emissions (tpy)	HAP/VOC Emissions Reported to MPCA (tpy)	HAP/VOC Emissions Not Reported (tpy)
2002	65.1	44.5	20.61
2003	50.60	9.89	40.71
2004	28.81	4.24	24.57
2005	36.95	6.99	29.96
2006	49.45	5.46	43.99
2007	70.92	5.16	65.76
2008	40.77	4.98	35.79
2009	32.89	4.96	27.93
2010	51.08	5.77	45.31
2011	71.10	4.76	66.34
2012	62.26	4.74	57.52
2013	87.78	8.75	79.03
2014	81.07	5.39	75.68
2015	80.10	5.72	74.38
2016	76.87	5.11	71.76
Total HAP/VOC Emissions Not Reported (tons since 2002)			759.32

2. AIR EMISSIONS PERMIT NO. 12300341-003, TABLE A: LIMITS AND OTHER REQUIREMENTS, TOTAL FACILITY, PAGE A-1; CE003 FLUIDIZED ACTIVATED CARBON BED, PAGE A-9

   Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated, unless otherwise noted in Table A.

   Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air permit. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.

   Operate a bead activated carbon adsorb/desorb/condenser emission control system at all times during which the associated emission units are in operation. Operation of the emission control

   system for HAP and Volatile Organic Compounds: greater than or equal to 95% control efficiency.

   Minn. R. 7019.1000 NOTIFICATIONS OF DEVIATIONS WHICH ENDANGER HUMAN HEALTH OR THE ENVIRONMENT; SHUTDOWNS AND BREAKDOWNS

   Subp. 4. Operation changes. In any shutdown, breakdown, or deviation covered by subpart 1, 2, or 3, the owner or operator shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.

The Regulated Party has failed to operate CE003 at a minimum of 95% control efficiency since at least 2002. The Regulated Party has stated that accurate records to demonstrate CE003 operated at its required minimum 95% control efficiency do not exist.

On July 22, 2018 the Regulated Party shutdown CE003; however, it continued to operate the corresponding process equipment without operating CE003, except for a few days in December 2018, until voluntary shutdown of the process equipment on January 14, 2019.

3. AIR EMISSIONS PERMIT NO. 12300341-003, TABLE B: RECURRENT SUBMITTALS, PAGE B-2

   Semiannual Deviations Report: Due 30 days after end of each calendar half-year starting 07/20/2000. The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1—June 30. The second report of each calendar year covers July 1—December 31. If no deviations occur, the Permittee shall submit a report stating that no deviations occurred during the reporting period.

   Compliance Certification: Due 31 days after end of each calendar year starting 07/20/2000 (for the previous calendar year). To be submitted to the Commissioner on a form approved by the Commissioner. This report covers all deviations experienced during the calendar year.

The Regulated Party failed to report excess HAP emissions in past semiannual deviations reports and annual compliance certifications from at least 2002 through 2017.

4. Minn. R. 7007.0150 PERMIT REQUIRED.
   Subpart 1. Prohibition.

   A. No person may construct, modify, reconstruct, or operate an emissions unit, emission facility, or stationary source until plans for it have been submitted to the agency and a written permit for it has been granted by the agency. Exceptions to the requirement to obtain a permit are located in part 7007.0300. Exceptions to the requirement to obtain a permit amendment are located in parts 7007.1250 and 7007.1350.

   Minn. R. 7007.0200 SOURCES REQUIRED OR ALLOWED TO OBTAIN A PART 70 PERMIT.

   Subpart 1. Part 70 permit required. The owners and operators of any emission facilities, emission units, and stationary sources described in subparts 2 to 5 must obtain a part 70 permit from the agency. All provisions of parts 7007.0100 to 7007.1850 apply to part 70 permits unless the provision states that it applies only to state permits, registration permits, capped permits, or general permits. If the owners and operators of a stationary source are required to obtain a part 70 permit by subpart 2, item B or C, the owners and operators shall also separately determine under subpart 2, item A, if the stationary source is a major source subject to major source requirements under section 112 of the act.

   Subp. 2. Major sources. Any "major source," which means any stationary source that is described in item A, B, or C, must obtain a permit under this part.

   A. A major source under section 112 of the act (Hazardous Air Pollutants), which is defined as:

   (1) For pollutants other than radionuclides, any stationary source that emits or has the potential to emit, in the aggregate, ten tons per year or more of any hazardous air pollutant which has been listed pursuant to section 112(b) of the act, 25 tons per year or more of any combination of such hazardous air pollutants, or such lesser quantity as the administrator may establish by rule.

   B. A major stationary source of air pollutants, as defined in section 302 of the act (General Provisions; Definitions), that directly emits or has the potential to emit, 100 tons per year or more of any air pollutant (including any major source of fugitive emissions of any such pollutant, as determined by rule by the administrator) and, effective July 1, 2011, 100,000 tons per year CO_2e of greenhouse gases. The fugitive emissions of a stationary source shall not be considered in determining whether it is a major stationary source for the purposes of section 302(j) of the act, unless the stationary source belongs to one of the following categories of stationary sources.

The Regulated Party has been a major source since at least 2002, when HAP emissions exceeded ten tons per year. The Regulated Party knew this by at least June 28, 2018, when an Audit was conducted, however the Regulated Party has not submitted an air emissions permit application for a Part 70 permit, and in fact continued to operate the Facility so that HAP and VOC emissions for 2018 exceeded 100 tons per year. The following table demonstrated HAP and VOC emissions since 2009.

Year	Actual HAP/VOC Emissions (tpy)	Part 70 HAP Limit (tpy)	Emissions Exceeding Part 70 HAP Limit (tpy)	Percentage Over Part70 HAP Limit (%)	Part 70 VOC Limit (tpy)	Emissions Exceeding Part 7- VOC Limit (tpy)	Percentage Over Part70 VOC Limit (#»)
2002	65.11	10	55.11	551.1	100	0	0
2003	50.60	10	40.60	406.0	100	0	0
2004	28.81	10	18.81	188.1	100	0	0
2005	36.95	10	26.95	269.5	100	0	0
2006	49.45	10	39.45	394.5	100	0	0
2007	70.92	10	60.92	609.2	100	0	0
2008	40.77	10	30.77	307.7	100	0	0
2009	32.89	10	22.89	228.9	100	*0*	0
2010	51.08	10	41.08	410.8	100	0	0
2011	7110	10	61.10	611.0	100	0	0
2012	62.26	10	52.26	522.6	100	0	0
2013	87.78	10	78.78	787.8	100	0	0
2014	81.07	10	71.07	710.7	100	0	0
2015	80.10	10	70.10	701.0	100	0	0
2016	76.87	10	66.87	668.7	100	0	0
2017	73.02	10	63.02	630.2	100	0	0
2018	120.456	10	**110.456**	**1104.56**	100	20.456	20.456

In October 2018 and February 2019 the Regulated Party submitted air permit applications stating that it intends to limit HAP and VOC emissions to once again become a synthetic minor source.

5. Minn. R. 7007.0150 PERMIT REQUIRED.
   Subpart 1. Prohibition.

   A. No person may construct, modify, reconstruct, or operate an emissions unit, emission facility, or stationary source until plans for it have been submitted to the agency and a written permit for it has been granted by the agency. Exceptions to the requirement to obtain a permit are located in part 7007.0300. Exceptions to the requirement to obtain a permit amendment are located in parts 7007.1250 and 7007.1350.

The Regulated Party constructed two space heaters (EQUI191 and EQUI192) at the Facility prior to issuance of an air permit that included these emissions units. The Regulated Party estimates that EQUI191 was constructed in 2016, and EQUI192 was constructed in 2015.

6. Minn. R. 7000.0300 DUTY OF CANDOR

   In all formal or informal negotiations, communications, proceedings, and other dealings between any person and any member, employee, or agent of the board or commissioner, it shall be the duty of each person and each member, employee, or agent of the board or commissioner to act in good faith and with complete truthfulness, accuracy, disclosure, and candor.

On September 20, 2018, the Regulated Party stated that it had reduced coating operations since shutting down CE003 on July 22, 2018. However, emissions data shows an increase in HAP and VOC emissions since that time period, especially increasing after the MPCA met with the Regulated Party on September 20, 2018, as outlined in the table below.

Month	HAP/VOC Emissions (tons
July 2018	8.08
August 2018	12.16
September 2018	8.67
October 2018	13.15
November 2018	13.02
December 2018	12.95

7. 40 CFR PART 63, SUBPART MMMM - NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SURFACE COATING OF MISCELLANEOUS METAL PARTS AND PRODUCTS

   § 63.3881 Am I subject to this subpart?

   (b) You are subject to this subpart if you own or operate a new, reconstructed, or existing affected source, as defined in § 63.3882, that uses 946 liters (250 gallons (gal)) per year, or more, of coatings that contain hazardous air pollutants (HAP) in the surface coating of miscellaneous metal parts and products defined in paragraph (a) of this section; and that is a major source, is located at a major source, or is part of a major source of emissions of HAP. A major source of HAP emissions is any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit any single HAP at a rate of 9.07 megagrams (Mg) (10 tons) or more per year or any combination of HAP at a rate of 22.68 Mg (25 tons) or more per year. You do not need to include coatings that meet the definition of non-HAP coating contained in § 63.3981 in determining whether you use 946 liters (250 gal) per year, or more, of coatings in the surface coating of miscellaneous metal parts and products.

§ 63.3883 When do I have to comply with this subpart?

The date by which you must comply with this subpart is called the compliance date. The compliance date for each type of affected source is specified in paragraphs (a) through (c) of this section. The compliance date begins the initial compliance period during which you conduct the initial compliance demonstration described in §§ 63.3940, 63.3950, and 63.3960.

(c) For an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP emissions, the compliance date is specified in paragraphs (c)(1) and (2) of this section.

(2) For any portion of the source that becomes an existing affected source subject to this subpart, the compliance date is the date 1 year after the area source becomes a major source or 3 years after January 2, 2004, whichever is later.

(d) You must meet the notification requirements in § 63.3910 according to the dates specified in that section and in subpart A of this part. Some of the notifications must be submitted before the compliance dates described in paragraphs (a) through (c) of this section.

§ 63.3890 What emission limits must I meet?

(b) For an existing affected source, you must limit organic HAP emissions to the atmosphere from the affected source to the applicable limit specified in paragraphs (b)(1) through (5) of this section, except as specified in paragraph (c) of this section, determined according to the requirements in § 63.3941, § 63.3951, or § 63.3961.

(1) For each existing general use coating affected source, limit organic HAP emissions to no more than 0.31 kg (2.6 lb) organic HAP per liter (gal) coating solids used during each 12-month compliance period.

§ 63.3891 What are my options for meeting the emission limits?

You must include all coatings (as defined in §63.3981), thinners and/or other additives, and cleaning materials used in the affected source when determining whether the organic HAP emission rate is equal to or less than the applicable emission limit in §63.3890. To make this determination, you must use at least one of the three compliance options listed in paragraphs (a) through (c) of this section. You may apply any of the compliance options to an individual coating operation, or to multiple coating operations as a group, or to the entire affected source. You may use different compliance options for different coating operations, or at different times on the same coating operation. You may employ different compliance options when different coatings are applied to the same part, or when the same coating is applied to different parts. However, you may not use different compliance options at the same time on the same coating operation. If you switch between compliance options for any coating operation or group of coating operations, you must document this switch as required by § 63.3930(c), and you must report it in the next semiannual compliance report required in §63.3920.

(a) Compliant material option. Demonstrate that the organic HAP content of each coating used in the coating operation(s) is less than or equal to the applicable emission limit in § 63.3890, and that each thinner and/or other additive, and cleaning material used contains no organic HAP. You must meet all the requirements of §§ 63.3940, 63.3941, and 63.3942 to demonstrate compliance with the applicable emission limit using this option.

(b) Emission rate without add-on controls option. Demonstrate that, based on the coatings, thinners and/or other additives, and cleaning materials used in the coating operation(s), the organic HAP emission rate for the coating operation(s) is less than or equal to the applicable

emission limit in § 63.3890, calculated as a rolling 12-month emission rate and determined on a monthly basis. You must meet all the requirements of §§ 63.3950, 63.3951, and 63.3952 to demonstrate compliance with the emission limit using this option.

(c) Emission rate with add-on controls option. Demonstrate that, based on the coatings, thinners and/or other additives, and cleaning materials used in the coating operation(s), and the emissions reductions achieved by emission capture systems and add-on controls, the organic HAP emission rate for the coating operation(s) is less than or equal to the applicable emission limit in § 63.3890, calculated as a rolling 12-month emission rate and determined on a monthly basis. If you use this compliance option, you must also demonstrate that all emission capture systems and add-on control devices for the coating operation(s) meet the operating limits required in § 63.3892, except for solvent recovery systems for which you conduct liquid-liquid material balances according to § 63.3961(j), and that you meet the work practice standards required in § 63.3893. You must meet all the requirements of §§ 63.3960 through 63.3968 to demonstrate compliance with the emission limits, operating limits, and work practice standards using this option.

§ 63.3910 What notifications must I submit?

(a) General. You must submit the notifications in §§ 63.7(b) and (c), 63.8(l)(4), and 63.9(b) through (e) and (h) that apply to you by the dates specified in those sections, except as provided in paragraphs (b) and (c) of this section.

(b) Initial Notification. You must submit the initial notification required by § 63.9(b) for a new or reconstructed affected source no later than 120 days after initial startup or 120 days after January 2, 2004, whichever is later. For an existing affected source, you must submit the initial notification no later than 1 year after January 2, 2004...

(c) Notification of compliance status. You must submit the notification of compliance status required by § 63.9(h) no later than 30 calendar days following the end of the initial compliance period described in § 63.3940, § 63.3950, or § 63.3960 that applies to your affected source....

§ 63.3920 What reports must I submit?

(a) Semiannual compliance reports. You must submit semiannual compliance reports for each affected source according to the requirements of paragraphs (a)(1) through (7) of this section. The semiannual compliance reporting requirements may be satisfied by reports required under other parts of the Clean Air Act (CAA), as specified in paragraph (a)(2) of this section.

(1) Dates. Unless the Administrator has approved or agreed to a different schedule for submission of reports under § 63.10(a), you must prepare and submit each semiannual compliance report according to the dates specified in paragraphs (a)(1)(i) through (iv) of this section. Note that the information reported for each of the months in the reporting period will be based on the last 12 months of data prior to the date of each monthly calculation.

(i) The first semiannual compliance report must cover the first semiannual reporting period which begins the day after the end of the initial compliance period described in § 63.3940, § 63.3950, or § 63.3960 that applies to your affected source and ends on June 30 or December 31, whichever date is the first date following the end of the initial compliance period.

(ii) Each subsequent semiannual compliance report must cover the subsequent semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(iii) Each semiannual compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.

§ 63.3930 What records must I keep?

You must collect and keep records of the data and information specified in this section. Failure to collect and keep these records is a deviation from the applicable standard.

(a) A copy of each notification and report that you submitted to comply with this subpart, and the documentation supporting each notification and report. If you are using the predominant activity alternative under § 63.3890(c), you must keep records of the data and calculations used to determine the predominant activity. If you are using the facility-specific emission limit alternative under § 63.3890(c), you must keep records of the data used to calculate the facility-specific emission limit for the initial compliance demonstration. You must also keep records of any data used in each annual predominant activity determination and in the calculation of the facility-specific emission limit for each 12-month compliance period included in the semi-annual compliance reports.

(b) A current copy of information provided by materials suppliers or manufacturers, such as manufacturer's formulation data, or test data used to determine the mass fraction of organic HAP and density for each coating, thinner and/or other additive, and cleaning material, and the volume fraction of coating solids for each coating. If you conducted testing to determine mass fraction of organic HAP, density, or volume fraction of coating solids, you must keep a copy of the complete test report. If you use information provided to you by the manufacturer or supplier of the material that was based on testing, you must keep the summary sheet of results provided to you by the manufacturer or supplier. You are not required to obtain the test report or other supporting documentation from the manufacturer or supplier.

(c) For each compliance period, the records specified in paragraphs (c)(1) through (4) of this section.

(1) A record of the coating operations on which you used each compliance option and the time periods (beginning and ending dates and times) for each option you used.

(2) For the compliant material option, a record of the calculation of the organic HAP content for each coating, using Equation 2 of § 63.3941.

(3) For the emission rate without add-on controls option, a record of the calculation of the total mass of organic HAP emissions for the coatings, thinners and/or other additives, and cleaning materials used each month using Equations 1, 1A through 1C, and 2 of § 63.3951; and, if applicable, the calculation used to determine mass of organic HAP in waste materials according to § 63.3951(e)(4); the calculation of the total volume of coating solids used each month using Equation 2 of § 63.3951; and the calculation of each 12-month organic HAP emission rate using Equation 3 of § 63.3951.

(4) For the emission rate with add-on controls option, records of the calculations specified in paragraphs (c)(4)(i) through (v) of this section.

(d) A record of the name and volume of each coating, thinner and/or other additive, and cleaning material used during each compliance period. If you are using the compliant material option for all coatings at the source, you may maintain purchase records for each material used rather than a record of the volume used.

(e) A record of the mass fraction of organic HAP for each coating, thinner and/or other additive, and cleaning material used during each compliance period unless the material is tracked by weight.

(f) A record of the volume fraction of coating solids for each coating used during each compliance period.

(g) If you use either the emission rate without add-on controls or the emission rate with add-on controls compliance option, the density for each coating, thinner and/or other additive, and cleaning material used during each compliance period.

(h) If you use an allowance in Equation 1 of § 63.3951 for organic HAP contained in waste materials sent to or designated for shipment to a treatment, storage, and disposal facility (TSDF) according to § 63.3951(e)(4), you must keep records of the information specified in paragraphs (h)(1) through (3) of this section.

(i) You must keep records of the date, time, and duration of each deviation.

(j) If you use the emission rate with add-on controls option, you must keep the records specified in paragraphs (k)(1) through (8) of this section.

The Regulated Party has been subject to NESHAP MMMM since January 2, 2007 when it became a major source of HAP emissions by emitting more than 10 tons per year of a single HAP. Therefore, the Regulated Party should have complied with NESHAP MMMM by the compliance date, which was January 2, 2007.

In order to comply with NESHAP MMMM, the Regulated Party should have limited its organic HAP emissions to less than 2.6 pounds organic HAP per gallon coating solids used during each 12-month compliance period. The Regulated Party has only calculated NESHAP MMMM organic HAP emission for 2018, demonstrating an organic HAP emission of 86.16 pounds organic HAP per gallon coating solids. This is an exceedance of NESHAP MMMM's HAP limit by approximately 3314%.

The Regulated Party has not submitted the Initial Notification, due by January 2, 2005; Notification of Compliance Status, due by July 31, 2007; and Semiannual Compliance Reports due every January 31 and July 31, since July 2007 through July 31, 2018.

The Regulated Party has not calculated the organic HAP limit for any other time periods, stating that the records to do so are not available, and has not submitted the Initial Notification, Notification of Compliance Status, or any Semiannual Compliance Reports, even though the Regulated Party knew by at least June 28, 2018, based on its investigation and audit, that it was subject to NESHAP MMMM.

Part 7. REGULATED PAR7Y' *STATEMENT*

The Regulated Party acknowledges that the violations in Part 6 of this Agreement are alleged and that it is executing this Agreement and committing to the actions described in this Agreement to amicably resolve those alleged violations and address the related concerns of our community.

Upon the Regulated Party's discovery of potential non-compliance regarding TCE emissions the Regulated party immediately initiated an environmental audit and promptly reported the results to the MPCA in order to inform the MPCA of the potential non-compliance and facilitate a return to compliance as quickly as possible in cooperation with the MPCA.

The Regulated Party's environmental audit report to the MPCA included a commitment to investigate the feasibility of the use of a non-HAP solvent to replace TCE in its production processes. Since that time the Regulated Party identified a feasible non-HAP solvent and has voluntarily committed to eliminating the use of TCE in its facility.

Rart 8. CIVIL PENALTY.

The Regulated Party agrees to pay $4,500,000.00 to the MPCA as a civil penalty for the violations alleged in Part 6 within 30 days of receipt of an invoice from the MPCA. An invoice for the civil penalty will be sent to the Regulated Party upon the Effective Date of the Agreement. Payment of the penalty amount of $4,500,000.00 is to be by check payable to the Minnesota Pollution Control Agency and should not be submitted until an invoice from the MPCA is received.

The check must be mailed to MPCA, P.O. Box 64893, St. Paul, Minnesota, 55164-0893; or to make an electronic payment, contact MPCA Fiscal Services at 651-757-2182.

If the Regulated Party fails to make the required payment within 30 days after receipt of the above-referenced invoice, the Regulated Party agrees to pay a late payment charge in an amount equal to 10% of the unpaid civil penalty. Sixty days after the Effective Date of this Agreement, the Regulated Party agrees to pay an additional late payment charge in an amount equal to 20% of the unpaid civil penalty. If the payment, including late charges, is not received by the MPCA within 60 days after the Effective Date of this Agreement, the MPCA may immediately exercise any and all administrative and judicial remedies available to it to collect the amount due. The Regulated Party agrees to pay and shall also be indebted to the MPCA for its attorneys' fees and cost incurred by the MPCA in connection with its collection of the amounts owed pursuant to this Agreement.

Part9. *SUPPLElvirar» suvinouivizazAL PROJECTS*

a. The Regulated Party has proposed and the MPCA accepts the proposal to perform Supplemental Environmental Projects (SEPs) at a cost to the Regulated Party of at least $1,500,000.00

b. SEP 1 shall include the following: The Regulated Party shall coordinate with Tree Trust http://treetrust.org/ to complete tree planting and maintenance projects over 3 years of growing cycles (2019, 2020 & 2021). The Regulated Party shall purchase 1,500 #10 nursery container, or caliper equivalent trees to be planted over the three growing cycles in public and community areas, such as parks and nature centers. Priority placement shall begin with facility property placement to provide residential screening, with the balance of trees being placed within the geographical bounds of the communities of White Bear Lake, Gem Lake and White Bear Township, and extend outward in a 20-mile radius as necessary to place the trees advantageously. The total value of this SEP will be $750,000.00 The Regulated Party will be responsible for the project costs. This project will begin on the date this Agreement is signed and will end upon

submission of the final report. The Regulated Party shall provide the following information to the MPCA to document progress and completion of the project:

(1) The Regulated Party shall provide siting plans to the MPCA for each year including number of trees and proposed locations for each year's growing cycle prior to undertaking planting activities. Siting plans shall be due for spring planting events no later than April 30, 2019, 2020 and 2021 respectively; and for fall events no later than July 31, 2019, 2020 and 2021 respectively;

(2) The Regulated Party shall provide invoices or other documents showing the number of trees purchased each growing cycle. Documentation of purchase records shall be due no later than January 15th, 2020, 2021 and 2022 respectively;

(3) The Regulated Party shall provide a final report for each year (2019, 2020 and 2021) showing the number of trees planted and locations the trees were planted and the total costs incurred by the Regulated Party. The report shall also include dates of each planting event. Final reports shall be due no later than December 15, 2019, 2020 and 2021 respectively;

(4) The Regulated Party shall provide a final report demonstrating project completion describing the final maintenance activities performed (watering completion), the costs incurred by the Regulated Party, and the survival rate of the trees planted in each planting location. The final project report is due no later than January 1, 2024.

c. SEP 2 shall include the following: The Regulated Party shall coordinate with the Minnesota Technical Assistance Program http://www.mntap.umn.edu/ (MnTap) to provide support to reduce and eliminate TCE emissions at facilities using TCE. The Regulated Party will accomplish this by conducting testing on alternative solvents, conducting research and development related to alternative solvents and providing outreach related to that research, including proposing alternatives, providing transitional support, and providing general P2 assistance to the target group. The Regulated Party will be responsible for the project costs. Priority outreach will begin with facilities most likely to yield the greatest amount of TCE reduction at those facilities located most closely to the communities of White Bear Lake, White Bear Lake Township and Gem Lake and within a 40-mile radius of those municipalities. Secondly, priority is to be placed on facilities most likely to yield the most TCE reduction located in Environmental Justice communities, and lastly facilities most likely to yield the most TCE reduction statewide. The total value of this SEP will be $750,000.00 This project will take place beginning on the date this Agreement is signed and will terminate upon the Regulated Party providing its final report, which is due no later thah January 30, 2023. The Regulated Party shall provide the following information to the MPCA to document progress and completion of the project:

(1) The Regulated Party shall provide, no later than 60 days after the execution date of this Agreement, a Project Strategy and Work Plan for MPCA review and approval, that identifies the target facilities, including location; along with the specific tasks that will be completed as part of the effort, and how those tasks will be completed to emphasize both reduction and elimination of TCE by introducing alternatives, providing transitional support, and providing general P2 assistance. The Work Plan shall also include proposed outcomes of the project.

(2) The Regulated Party shall provide, no later than 30 days after the end of each calendar

year, an annual report, which shall describe the costs incurred by the Regulated Party, the number of facilities the Regulated Party provided with technical support, their locations, and the outcomes of those interactions in terms of TCE usage reduced or eliminated, and other P2 activities undertaken, and identifying all quantifiable TCE reductions.

(3) The Regulated Party shall provide, no later than January 30, 2023, a final report for the project summarizing all elements in the previous annual reports as well the most recent year to date results, which shall demonstrate project completion.

d. The SEPs and schedules above become enforceable terms of this Agreement upon execution of this Agreement. The Regulated Party understands that the actual cost of completion of any SEP may exceed the values listed above. The Regulated Party agrees to expend the amount of money necessary to complete the SEPs as described, and agrees that the Regulated Party shall receive no payment or other compensation for the work performed in completion of the SEPs. Nothing in this Agreement shall prevent the Regulated Party from seeking third-party contribution for penalties paid or costs incurred in implementing the SEPs or any other part of this Agreement, from any person who is not a party to this Agreement whom the Regulated Party reasonably believes is or may be liable to the Regulated Party. The Regulated Party shall maintain copies of all invoices, contracts, manifests, receipts, and any and all other documentation of the actual costs the Regulated Party incurs in completing the SEPs and shall provide cost documentation to the MPCA within 30 days of completing each SEP.

e. If the Regulated Party abandons any SEP prior to completion, the Regulated Party shall pay to the MPCA a civil penalty that represents the difference between the SEP pledge listed above and the amount expended by the Regulated Party as of the date of abandonment within 30 days after notice by the MPCA that the additional civil penalty is due. Payment of the above penalty amount is to be by certified check payable to the Minnesota Pollution Control Agency. The check must be mailed to MPCA, P.O. Box 64893, St. Paul, Minnesota, 55164-0893; or to make an electronic payment, contact MPCA Fiscal Services at 651-757-2182.

f. If the Regulated Party fails to make the required payment within 45 days after receiving notice from the MPCA that the additional civil penalty is due, the Regulated Party agrees to pay a late payment charge in an amount equal to 10 percent of the unpaid civil penalty. Sixty days after receiving notice from the MPCA that the additional civil penalty is due, the Regulated Party agrees to pay an additional late charge in an amoont equal to 20 percent of the unpaid civil penalty. If the payment, including late charges, is not received by the MPCA within 60 days after receiving notice from the MPCA that the additional civil penalty is due, the MPCA may immediately exercise any and all administrative and judicial remedies available to it to collect the amount due. The Regulated Party agrees to pay and shall also be indebted to the MPCA for its attorneys' fees and cost incurred by the MPCA in connection with its collection of the amounts owed pursuant to this Agreement.

Rart 10. REGULATED PARTY ***REQUIREMENTS.***

The Regulated Party agrees to the following requirements:

Emissions Inventory Reports

g. Within 30 days of the Effective Date of this Agreement, the Regulated Party shall compete and submit revised Emission Inventory Reports for 2002 to 2017.

THIS REQUIREMENT HAS BEEN COMPLETED.

h. Within 30 days of the Effective Date of this Agreement, submit a plan detailing steps that will be taken to ensure that all future coaters will be reported in the Emissions Inventory Report.

i. Within 30 days of the Effective Date of this Agreement, submit a plan detailing steps that will be taken to ensure that all actual emissions are reported in the Emissions Inventory Report.

Emissions Control Equipment

j. Within 30 days of the Effective Date of this Agreement, submit a plan detailing a timeline for replacing CE003.

k. Within 10 days of beginning construction on the replacement control equipment for CE003, submit a notification to the MPCA.

l. Within 10 days of starting up the replacement control equipment for CE003, submit a notification to the MPCA.

m. Within 30 days of starting up the replacement control equipment for CE003, conduct a VOC performance test. Follow all applicable performance testing rules, including pre-test notification and approval.

n. Within 30 days of conducting a VOC performance test on the new control equipment, submit the VOC test report to the MPCA.

o. Within 45 days of conducting a VOC performance test on the new control equipment, submit a Testing Frequency Plan.

NESHAP MMMM

p. Within 30 days of the Effective Date of this Agreement, submit the Initial Notification, and Notification of Compliance Status, dating back to 2007, as required by NESHAP MMMM.

q. Within 30 days of the Effective Date of this Agreement, submit a plan detailing steps that will be taken to re-establish the Facility as a non-major source of HAP, so that NESHAP MMMM no longer applies.

THIS REQUIREMENT HAS BEEN COMPLETED

Emission Units Required to be Permitted

r. Within 30 days of the Effective Date of this Agreement, submit a plan detailing steps that will be taken to ensure that all future sources of emissions are adequately evaluated to determine if they are insignificant.

Deviation Reizorts And Calculations

s. Within 30 days of the Effective Date of this Agreement, submit updated Semiannual Deviation Reports and Compliance Certifications, reporting all deviations and excess emissions that have occurred since 2002.

t. Within 30 days of the Effective Date of this Agreement, submit HAP and VOC calculations from 2002 to 2009.

THIS REQUIREMENT HAS BEEN COMPLETED

u. Within 30 days of the Effective Date of this Agreement, submit emissions calculations regarding the plastic manufacturing at the southern campus.

THIS REQUIREMENT HAS BEEN COMPLETED

Preservation of Documents

v. The Regulated Party shall preserve all documents, including emails and electronic correspondence, in its possession, custody, or control that relate to this Agreement, any alleged violation in Part 6, and the following:

(4) TCE purchases, waste, usage, reports, and any concerns, including but not limited to, concerns regarding TCE's effects on health and human safety or the environment, since 2000;

(5) (2) TCE recovery, including but not limited to, when the amount recovered and length of time TCE was being recovered, at the Facility since 2000;

(6) CE003's operation, including but not limited to, records related to what days CE003 was operating, since its installation;

(7) CE003's control efficiency, including but not limited to, CE003's failure to maintain 95% efficiency, since its installation;

(8) CE003's maintenance, including but not limited to, any regularly scheduled maintenance, breakdown reports, and correspondence with the manufacturer or third parties about CE003 since its installation;

(9) Documents related to or that could be used to estimate HAP calculations since 2002.

w. The Regulated Party shall not destroy any documents in its possession, custody, or control related to this Agreement, the alleged violations in Part 6, and the above listed categories p (1)-(6) until three years following the termination of this Agreement pursuant to Part 24.

Investigation, Monitoring, or Remediation

x. If the MPCA reasonably determines, after reviewing the reports identified above in Part 10, including to any investigation and remediation work plans, that additional investigation or monitoring is required, or that additional response actions are reasonable and necessary to protect public health, welfare or the environment, the MPCA shall notify the Regulated Party.

y. Within 30 days after receipt of the notification from the MPCA, which shall include a complete description of the basis for the determination, the Regulated Party shall submit information to the MPCA for review and approval.

z. The Regulated Party's failure to provide information or to provide deficient information will be considered a violation of this Agreement. Upon approval from the MPCA to conduct investigation, work plans, or a response action, the Regulated Party shall implement any approved plan in accordance with the time schedules in the plan.

aa. Within 30 calendar days of the Effective Date of this Agreement, the Regulated Party shall hire a qualified environmental consultant to develop an investigation work plan (Work Plan), following the Risk Based Site Characterization and Sampling Guidance Document on the MPCA Web site at https://www.pca.state.mn.us/waste/risk-based-site-evaluation-guidance. Prior to submittal of the Work Plan, the consultant may contact staff Hydrogeologist, Michael Ginsbach at 651-757-2329 or michael.ginsbach@state.mn.us with questions regarding Work Plan content. The Work Plan shall

contain a time schedule for implementation. The Work Plan shall describe in detail the steps that will be taken to accomplish the following:

(1) Conduct a survey of the Facility, including processing, storage, and loading and unloading areas, to determine and define any areas or processes that may be a source of contamination. The survey shall include an assessment of the flooring surfaces within the buildings to identify any cracks, cold joints or other potential pathways where contaminants may have been able to be released into the environment.

(2) Collect samples from soil, groundwater, surface water, sediment, soil vapor, and private drinking water wells as necessary to define the extent and magnitude of contamination that may have been caused by the Regulated Parties activities at its Facility, including the production and storage of battery terminals and fishing sinkers and any other activities that have occurred on the property over the past 70 years; and analyze the samples for volatile organic carbons and lead using approved methods under U.S. Environmental Protection Agency SW-846 or equivalent methods.

bb. Within 60 calendar days of the Effective Date of this Agreement, the Regulated Party shall file an application with the MPCA to enter the remediation program as a Voluntary Responsible Party. The online application can be found here https://www.pca.state.mn.us/data/e-services.

cc. Within 75 calendar of the Effective Date of this Agreement, the Regulated Party shall submit the Work Plan created as described in Paragraph a. above, to the MPCA for review and approval. The Work Plan shall be designed to define the magnitude and extent of releases to soil, groundwater, surface water, sediment, and soil vapor. The Work Plan shall be submitted along with the application to the remediation program described in Paragraph b. above. If the Work Plan is found to be deficient or inadequate, the MPCA will require re-submittal of the Work Plan until it is approvable. After MPCA approval of the Work Plan, the Regulated Party shall implement the Work Plan in accordance with the approved time schedule in the Work Plan. Completion of the approved Work Plan according to its terms and the approved time schedule shall be enforceable requirements of this Agreement.

dd. Within 75 calendar days of after completion of the Work Plan under the approved time schedule, the Regulated Party shall submit a Remedial Investigation Report (Remedial Report) to the MPCA for review and approval. The Remedial Report shall describe the nature and extent of contamination, field sampling, and analytical procedures used, and shall make recommendations for future site investigation or remediation.

ee. After review of the results and findings of the Work Plan and the recommendations in the Remedial Report, MPCA staff will determine if further investigation or remedial actions are necessary. The investigation shall continue until the extent and magnitude of contaminant releases that occurred on site are fully defined, both on and off site, to the satisfaction of the MPCA. If further investigation or remedial action is required, the MPCA will require the Regulated Party to submit to the MPCA for approval a Supplemental Investigation Work Plan (Supplemental Work Plan) or Remedial Action Plan (RAP) and a schedule which addresses the outstanding requirements detailed in the MPCA request.

If. The Regulated Party agrees to continue to work cooperatively with the MPCA Remediation Program until they receive a No Further Action Letter. Failure to complete investigation and remediation required by the MPCA may subject the Regulated Party to additional enforcement actions under other authorities, including but not limited to the Minnesota Environmental Response and Liability Act (MERLA) or the Resource Conservation and Recovery Act (RCRA) and nothing in this

Agreement shall be construed as limiting MPCA's authority to require the Regulated Party to complete the investigation and remediation.

Alternative Operating Scenario

gg. The MPCA will allow the Regulated Party to resume coating operations under an approved Alternative Operating Scenario, as outlined below, until the Regulated Party's new air emissions permit is issued. If the Regulated Party fails to complete any of the requirements listed below or the MPCA determines any information provided is deficient, the Regulated Party is prohibited from continuing its coating operations. The MPCA also reserves the right to terminate the Alternative Operating Scenario and prohibit the Regulated Party from continuing to resume coating operations allowed under this Alternative Operating Scenario at any time if the MPCA Commissioner determines that is necessary to protect human health, safety or the environment. The parties agree that the MPCA Commissioner's decision to terminate the Alternative Operating Scenario shall be final and not subject to the Resolution of Disputes in Part 14. The parties further agree that the MPCA's allowing the Regulated Party to resume coating operations under this Alternative Operating Scenario does not vest the Regulated Party with any protectable interest and that should the MPCA Commissioner terminate the Alternative Operating Scenario, the Regulated Party will not suffer any irreparable harm. Before the Regulated Party may begin to operate under the Alternative Operating Scenario and resume coating operations, the Regulated Party shall complete the following requirements:

hh. Remove all TCE containing material from the facility and provide information to the MPCA confirming this.

THIS REQUIREMENT HAS BEEN COMPLETED.

ii. Submit a new air permit application that includes limits the coating operations solvent to HAP free-solvents.

THIS REQUIREMENT HAS BEEN COMPLETED.

jj. Submit an air monitoring plan, subject to MPCA approval, including proposed siting of VOC ambient monitors, proposed monitoring frequencies for VOC ambient monitors, proposed specific monitors, proposed contractor to gather the samples, proposed lab that will analyze the samples, and proposed lab turnaround time for sample results.

1. The proposed siting for the ambient monitors shall follow EPA siting guidance as much as possible, however the MPCA understands that due to property details the Regulated Party will not be able to completely adhere to the guidance.
2. The lab shall provide results within 48 hours until six consecutive, valid sampling events have occurred.
3. After six consecutive, valid sampling events, then the lab shall provide results within 14 calendar days.

THIS REQUIREMENT HAS BEEN COMPLETED.

kk. Submit a Quality Assurance Project Plan (QAPP), subject to approval, according to the requirements of Appendix M. The requirements for a QAPP are available in EPA Requirements for Quality Assurance Project Plans: EPA QA/R-5.

THIS REQUIREMENT HAS BEEN COMPLETED.

ll. Upon approval of the air monitoring plan and the QAPP by the MPCA, install the ambient monitors in the approved location.

THIS REQUIREMENT HAS BEEN COMPLETED.

mm. Upon completion of the above requirements, the Regulated Party may resume coating operations subject to the limitations and requirements in this Alternative Operating Scenario.

Upon resuming coating operation and as a requirement to continue this Alternative Operating Scenario, the Regulated Party shall

nn. Notify the MPCA within 24 hours of resuming coating operations.

oo. Limit FluoSolv usage to less than or equal to 0.90 tons per calendar day, calculated as a 24 hour sum. This limit applies to all FluoSolv used in all coaters at the Facility.

pp. On each day of operation calculate, record, and maintain a record of the total tons of FluoSolv used at the Facility by 10:00 am the following calendar day for the previous 24-hour period. This shall be based on daily weight scale readings of containers of FluoSolv used at the Facility and the density of FluoSolv taken from the most recent SDS or Certificate of Analysis. This record must be maintained as an unlocked editable excel spreadsheet.

qq. By 12:00 pm every calendar day submit the unlocked editable excel spreadsheet daily FluoSolv use record to the MPCA detailing the total tons of FluoSolv used for the previous 24-hours.

rr. Utilize the approved contractor to conduct ambient air monitoring for VOC emissions as outlined in the approved monitoring plan. Monitoring must begin the first day coating operations resume and will not conclude until termination of the Agreement.

ss. VOC, and trans-1,2-dichloroethylene (trans-1,2-DCE), monitor results shall be submitted to the MPCA directly from the approved lab within 48 hours until six consecutive, valid sampling events have occurred. After six consecutive, valid sampling events the time for the lab to provide results to the MPCA shall be no greater than 14 calendar days per sampling event. The monitoring results must report the VOC and trans-a,2-DCE concentrations in micrograms per cubic meter. The MPCA reserves the right to request a EPA Air Method Toxic Organics-15 (TO-15), or the top five tentatively identified compounds (TICs) identified in the monitoring results.

tt. If the laboratory results demonstrate an exceedance of the trans-1,2-DCE 70 micrograms per cubic meter limit in a 24 hours sample, the Regulated Party shall, on the same day that the laboratory results are received, decrease the daily FluoSolv limit by 0.10 tons per calendar day for each trans-1,2-DCE monitor concentration exceedance. This reduced amount will become the new daily limit. The Regulated Party shall reduce by this method until the laboratory results no longer demonstrate an exceedance of the trans-1,2-DCE 70 micrograms per cubic meter limit in a 24 hour sample. For example:

1. After receiving the first exceedance, the new daily limit will be 0.80 tons per calendar day.
2. After receiving the second exceedance, the new daily limit will be 0.70 tons per calendar day.

3. After receiving the third exceedance, the new daily limit will be 0.60 tons per calendar day.

uu. Limit VOC emissions to 90 tons per year, calculated by the 15th day of each month, as a 12 month rolling sum, using a mass balance calculation. Submit this record by the 15th day of each month to the MPCA. The new air emissions permit will incorporate this record and the 12 month rolling sum will continue after the new air permit is issued.

vv. Notify the MPCA within 1 calendar day after any change to FluoSolv's formulation, as it is described in the Safety Data Sheet (SDS) submitted to the MPCA on January 25, 2019.

Part 11. ***RENALTIES FOR VIOLATIONS OF THIS AGREEMENT.***

a. If the Regulated Party fails to comply with requirements of Part 10 of this Agreement, the Regulated Party shall pay to the MPCA a penalty in the amount of $500.00 per requirement for each day of failure.

b. Penalties for failure to comply with requirements of Part 10 of this Agreement shall accrue from the date the Regulated Party was to have fulfilled the requirement until the Regulated Party fulfills the requirement. Penalties shall not accrue while the MPCA considers a timely extension request under Part 16 or during dispute resolution under Part 14, unless the MPCA determines that the Regulated Party filed the request or initiated dispute resolution solely for purposes of delay. If the Regulated Party does not pursue dispute resolution under Part 14 for denial of a timely extension request, penalties shall accrue from the date the extension request is denied by the MPCA Case Contact. If the Regulated Party pursues dispute resolution for denial of an extension request and does not file a timely challenge in a court of competent jurisdiction as provided by Part 14, penalties shall accrue from the date of a Commissioner's dispute resolution decision against the Regulated Party until the Regulated Party fulfills the requirement that is the subject of the extension request.

c. The Regulated Party shall pay a penalty under this Part within 30 days after receiving written notice from the MPCA that the penalty is due, unless the Regulated Party has challenged the factual basis of a penalty asserted under this Part under the dispute resolution provision of Part 14, in which case the penalty, if still applicable, shall be due within 30 days of final resolution of the dispute under Part 14. The written notice shall specify the provision of the Agreement that the Regulated Party has not fulfilled and indicate the date penalties began to accrue. If the Regulated Party fails to make timely payment, the Regulated Party agrees to pay a late payment charge, in addition to the stipulated penalty, to be assessed as follows. Forty-five days after receipt of written notice, the Regulated Party shall be obligated to pay a late charge in an amount equal to 10% of the unpaid stipulated penalty. Sixty days after receipt of written notice, the Regulated Party shall be obligated to pay an additional late charge in an amount equal to 20% of the unpaid stipulated penalty.

d. In dispute resolution before the Commissioner under Part 14, the Regulated Party can contest the factual basis for the MPCA's determination that the Regulated Party has not fulfilled a requirement of this Agreement covered by this Part. However, the Regulated Party waives its right to challenge, on legal grounds, the requirement that it pay penalties under this Part.

e. The Regulated Party shall not be liable for payment of penalties for failure to comply with requirements of Part 10 of this Agreement covered by this Part if it has submitted to the MPCA a timely request for an extension of schedule under Part 16 and the MPCA has granted the request. The MPCA's grant of an extension of schedule waives the payment of penalties covered by this Part only on the requirements for which the MPCA granted an extension of schedule and only for the time period

specified by the MPCA in the grant of an extension. An extension of schedule for one requirement of Part 10 does not extend the schedule for any other requirement of Part 10.

f. Any requirement of this Agreement may be enforced as provided in Minn. Stat. 9115.071. Payment of a stipulated penalty does not relieve the Regulated Party of its obligation to fulfill and complete requirements under the Agreement and to otherwise comply with the terms and conditions of the Agreement.

Part 12. ***COVENANT NOT TO SUE*** VIVO ***RESERVATION OF*** REMEOf£S.

With respect to the Regulated Party, the MPCA agrees not to exercise any administrative, legal or equitable remedies available to the MPCA to address the violations alleged and described in Part 6 as long as the Regulated Party performs according to and has complied with the terms and conditions contained in this Agreement.

The MPCA reserves the right to enforce this Agreement or take any action authorized by law, if the Regulated Party fails to comply with the terms and conditions of this Agreement.

Further, the MPCA reserves the right to seek to enjoin violations of this Agreement and to exercise its emergency powers pursuant to Minn. Stat. §§ 116.11 and Minn. Stat. 115.071 in the event conditions or the Regulated Party's conduct warrant such action. Nothing in this Agreement shall prevent the MPCA from exercising these rights and nothing in this Agreement constitutes a waiver of these rights.

The MPCA reserves the right to pursue recovery for Natural Resource Damages pursuant to Minn. Stat. § 115.071, Minn. Stat. ch. 115B4 or other laws. Nothing in this Agreement shall prevent the MPCA from exercising these rights and nothing in this Agreement constitutes a waiver of these rights.

The Regulated Party agrees to waive all claims it may now have, as of the effective date of this Agreement, under Minn. Stat. § 15.472 for fees and expenses arising out of matters leading up to and addressed in this Agreement.

Part *t3. REPEAT VIOLATIONS.*

Federal and state environmental programs establish harsher penalties for violations of environmental laws or rules that constitute repeat violations. In a proceeding to resolve alleged violations by the Regulated Party, if any, occurring after the date of the alleged violations set out in Part 6 of this Agreement, the Regulated Party may argue about the extent to which the violations alleged in Part 6 of this Agreement should affect the penalty amount for the later violations, but waives the right: (1) to contend that the violations alleged in Part 6 of this Agreement did not occur as alleged and (2) to require the MPCA to prove the violations alleged in Part 6 of this Agreement.

Part *t4. RESOLUTION OF DISRUTES.*

The parties to this Agreement shall resolve disputes that arise as to any part of the Agreement as follows:

a. Either party, acting through its Case Contact (as named in Part 17 below), may initiate dispute resolution by providing to the Case Contact of the other party an initial written statement setting forth the matter in dispute, the position of the party, and the information the party is relying upon to support its position.

The other party, acting through its Case Contact, shall provide a written statement of its position and supporting information to the Case Contact of the initiating party within 14 calendar days after receipt of the initial written statement.

b. If the parties, acting through their Case Contacts, do not reach a resolution of the dispute and reduce such resolution to writing in a form agreed upon by the parties within 21 calendar days after the initiating party receives the statement of position from the responding party, the Commissioner shall issue a written decision resolving the dispute. The written decision may address stipulated penalties assessed pursuant to Part 8. The Commissioner's decision shall be considered a final decision of the MPCA for purposes of judicial review.

c. The Commissioner's decision shall become an integral and enforceable part of this Agreement unless the Regulated Party timely challenges the decision in a court of competent jurisdiction. Failure to timely challenge means the Regulated Party agrees to comply with the MPCA Commissioner's decision on the matter in dispute and to pay any penalties that accrue pursuant to Part 8 for failure to fulfill requirements of this Agreement that are the subject of the dispute resolution. Further, if the Commissioner's decision assesses penalties pursuant to Part 8 of this Agreement, the Regulated Party agrees to and shall pay the amount of penalty determined by the Commissioner within 60 days after receiving the Commissioner's decision.

d. Throughout any dispute resolution, the Regulated Party shall comply with all portions of the Agreement that the MPCA determines are not in dispute.

Part 15. VENUE.

Actions brought by the MPCA to enforce requirements and terms of this Agreement shall be venued in Ramsey County District Court.

Rart 16. EXTENSION OF SCHEDULES.

If the Regulated Party wants an extension of a deadline included in any schedule under this Agreement, including schedules established by approved submittals, the Regulated Party must request the extension in writing at least ten days before the scheduled deadline, or as soon as possible before that date if the reason for the extension request arises less than ten days before the deadline.

Each deadline extension request shall separately specify the reason why the extension is needed. No requested extension shall be effective until approved in writing by the MPCA, acting through the MPCA Case Contact or the Commissioner.

The MPCA shall grant an extension only for the period of time the MPCA determines is reasonable under the circumstances. The written approval or grant of an extension request shall be considered an enforceable part of the Agreement.

The Regulated Party has the burden of demonstrating to the satisfaction of the MPCA that the request for the extension is timely, and that good cause exists for granting the extension. Good cause can include, but is not limited to, delays caused by the MPCA in reviewing timely submittals required by this Agreement, submitted by the Regulated Party in complete and approvable form, which make it not feasible for the Regulated Party to meet the required schedules.

Good cause does not include unanticipated costs, increases in the cost of control equipment, or delays in MPCA review of submittals when the submittals are not in complete and approvable form. The Regulated Party may challenge a decision by the MPCA to deny a request for an extension under this Part.

Part *&7. CASE courAcr.*

The MPCA and the Regulated Party shall each designate a Case Contact for the purpose of overseeing the implementation of this Agreement. The MPCA Case Contact is Jennifer Carlson. The

address, telephone number, and email address of the MPCA's Case Contact is: 520 Lafayette Road North, St. Paul, MN 55155, 651-757-2538, and jennifer.m.carlson@state.mn.us. The MPCA Supplemental Environmental Project (SEP) Contact is Sarah Kilgriff. The address, telephone number, and email address of the MPCA's SEP Contact is: 520 Lafayette Road North, St. Paul, MN 55155, 651-757-2492, sarah.kilgriff@state.mn.us. The Regulated Party's Case Contact is Denise L'Allier-Pray. The address, telephone number, and email address of the Regulated Party's Case Contact is: 4400 Otter Lake Road, White Bear Township, MN 55110, 651-209-9441, denise.l'allier-pray@watergrem.com. Either party may change its designated Case Contact by notifying the other party in writing, within five days of the change. To the extent possible, communications between the Regulated Party and the MPCA concerning the terms and conditions of this Agreement shall be directed through the Case Contacts.

Part 18. *APPLICABLE LAWS AND PERMITS.*

This Agreement does not relieve the Regulated Party of the duty to comply with the requirements of all applicable federal, state and local laws and regulations, including without limitation in the Regulated Party's undertaking actions to comply with this Agreement. Except when the MPCA has specifically authorized a different compliance method in Part 10, the Regulated Party must also comply with all applicable permits, orders, stipulation agreements and schedules of compliance. Nothing in this Agreement exempts or relieves the Regulated Party of its obligation to comply with local governmental requirements.

Part 19. *OTHER CLAIMS.*

Nothing herein shall release the Regulated Party from any claims, causes of action or demands in law or equity by any person, firm, partnership, corporation or state entity not a signatory to this Agreement for any liability it may have arising out of or relating to the release of any pollutant or contaminant from its operations or from its Facility. Nor shall anything herein release the Regulated Party from any claims, causes of action or demands in law or equity by the MPCA reserved above in Part 12. Neither the Regulated Party nor the MPCA shall be held as a party to any contract entered into by the other party to implement the requirements of this Agreement.

Part 20. *HOLD HARMLESS AGREEMENT.*

The Regulated Party agrees to indemnify, save and hold the MPCA, its agents and employees harmless from any and all claims or causes of action arising from or on account of acts or omissions of the Regulated Party, its officers, employees, agents, or contractors in implementing the activities conducted pursuant to this Agreement; provided, however, that the Regulated Party shall not indemnify the MPCA or save or hold its employees and agents harmless from any claims or causes of action arising out of the acts or omissions of the MPCA, or its employees and agents.

When the Regulated Party is required to hold the MPCA harmless, the MPCA shall give the Regulated Party notice of any claim or cause of action subject to this Part and the Regulated Party has the right to participate in the defense against any claim or cause of action. No settlement shall be effective against the Regulated Party unless the Regulated Party agrees to the settlement. Nothing herein waives or modifies the provisions of the Minnesota Tort Claims Act, Minn. Stat. §§ 3.732, et seq., and other applicable law.

Part 21. *SUCCESSORS, AGENTS AND CONTRACTORS*

This Agreement shall be binding upon the Regulated Party and its successors and assigns and upon the MPCA, its successors and assigns. If the Regulated Party sells or otherwise conveys or assigns any of its right, title or interest in the Facility, the conveyance shall not release the Regulated Party from any

obligation imposed by this Agreement, unless the party to whom the right, title or interest has been transferred or assigned agrees in writing to fulfill the obligations of this Agreement and the MPCA approves the transfer or assignment. The Regulated Party shall ensure that the Regulated Party's agents, contractors and subsidiaries comply with the terms and conditions of this Agreement.

Part 22. *AMENDMENTS.*

Except with respect to extensions of schedules granted under Part 16 and approved submittals under Part 10, this Agreement may be amended only by written agreement between the parties.

Part 23. *EffE€TIVE DATE.*

This Agreement shall be effective on the date it is signed by the MPCA.

Part 24. *TERMiu» now.*

The provisions of this Agreement shall be deemed satisfied and terminated when the Regulated Party receives written notice from the MPCA that the Regulated Party has demonstrated, to the satisfaction of the MPCA, that all terms of the Agreement have been completed. Termination of this Agreement does not release the Regulated Party from any duty to comply with any statutes, rules or permit conditions, whether or not they are cited in this Agreement. The Regulated Party agrees that it shall retain all records related to this Agreement for three years following its termination. Termination of this Agreement does not release the Parties from Parts 12 (Covenant Not To Sue And Reservation Of Remedies), 13 (Repeat Violations) and 20 (Hold Harmless Schedule), which terms shall survive the termination of this Agreement.

BY THEIR SIGNATURES BELOW, THE UNDERSIGNED REPRESENT THAT THEY HAVE AUTHORITY TO BIND THE PARTIES THEY REPRESENT

Water Gremlin Company

By: Junya Inoue

Name: Junya Inoue

Title: President

Date: 2/28/2019

STATE OF MINNESOTA

POLLUTION CONTROL AGENCY

By: Laura Bishop

Laura Bishop

Commissioner

Date: 3/1/2019

Attachment 6. Cumulative VOC emissions from Fluosolv and Highest 365-day rolling average of ambient t-DCE concentrations

Date	365 day Cummulative VOC emissions from Fluosolv (tons)	Date	365 day Cummulative VOC emissions from Fluosolv (tons)	Date	365 day Cummulative VOC emissions from Fluosolv (tons)	Date	365 day Cummulative VOC emissions from Fluosolv (tons)
3/1/19	0.54	4/15/19	14.46	6/1/19	27.38	7/18/19	45.95
3/2/19	0.87	4/16/19	14.55	6/2/19	27.94	7/19/19	46.21
3/3/19	1.30	4/17/19	14.65	6/3/19	28.52	7/20/19	46.49
3/4/19	1.80	4/18/19	14.74	6/4/19	29.01	7/21/19	46.76
3/5/19	2.26	4/19/19	14.83	6/5/19	29.51	7/22/19	47.10
3/6/19	2.76	4/20/19	14.91	6/6/19	29.99	7/23/19	47.42
3/7/19	3.14	4/21/19	15.00	6/7/19	30.49	7/24/19	47.80
3/8/19	3.53	4/22/19	15.09	6/8/19	30.49	7/25/19	48.16
3/9/19	3.83	4/23/19	15.18	6/9/19	30.49	7/26/19	48.50
3/10/19	4.21	4/24/19	15.27	6/10/19	30.99	7/27/19	48.83
3/11/19	4.58	4/25/19	15.36	6/11/19	31.57	7/28/19	49.15
3/12/19	4.87	4/26/19	15.45	6/12/19	32.09	7/29/19	49.51
3/13/19	5.18	4/27/19	15.55	6/13/19	32.63	7/30/19	49.85
3/14/19	5.55	4/28/19	15.64	6/14/19	33.16	7/31/19	50.20
3/15/19	5.95	4/29/19	15.73	6/15/19	33.74	8/1/19	50.60
3/16/19	6.38	4/30/19	15.82	6/16/19	34.32	8/2/19	51.00
3/17/19	6.78	5/1/19	16.02	6/17/19	34.98	8/3/19	51.01
3/18/19	7.16	5/2/19	16.33	6/18/19	35.57	8/4/19	51.01
3/19/19	7.54	5/3/19	16.64	6/19/19	36.13	8/5/19	51.42
3/20/19	7.97	5/4/19	16.83	6/20/19	36.56	8/6/19	51.80
3/21/19	8.38	5/5/19	16.94	6/21/19	36.85	8/7/19	52.21
3/22/19	8.68	5/6/19	17.03	6/22/19	36.86	8/8/19	52.67
3/23/19	8.92	5/7/19	17.25	6/23/19	36.86	8/9/19	53.05
3/24/19	9.28	5/8/19	17.52	6/24/19	37.36	8/10/19	53.34
3/25/19	9.62	5/9/19	17.93	6/25/19	37.81	8/11/19	53.61
3/26/19	9.95	5/10/19	18.30	6/26/19	38.32	8/12/19	54.01
3/27/19	10.31	5/11/19	18.48	6/27/19	38.73	8/13/19	54.42
3/28/19	10.53	5/12/19	18.78	6/28/19	39.17	8/14/19	54.81
3/29/19	10.77	5/13/19	19.21	6/29/19	39.59	8/15/19	55.23
3/30/19	10.98	5/14/19	19.76	6/30/19	39.95	8/16/19	55.52
3/31/19	11.22	5/15/19	20.24	7/1/19	40.37	8/17/19	55.67
4/1/19	11.45	5/16/19	20.67	7/2/19	40.78	8/18/19	55.89
4/2/19	11.69	5/17/19	21.14	7/3/19	41.25	8/19/19	56.27
4/3/19	11.95	5/18/19	21.67	7/4/19	41.25	8/20/19	56.64
4/4/19	12.19	5/19/19	22.16	7/5/19	41.25	8/21/19	56.89
4/5/19	12.44	5/20/19	22.69	7/6/19	41.26	8/22/19	57.03
4/6/19	12.67	5/21/19	23.21	7/7/19	41.26	8/23/19	57.03
4/7/19	12.92	5/22/19	23.74	7/8/19	41.66	8/24/19	57.04
4/8/19	13.19	5/23/19	24.32	7/9/19	42.06	8/25/19	57.04
4/9/19	13.46	5/24/19	24.88	7/10/19	42.51	8/26/19	57.05
4/10/19	13.67	5/25/19	24.88	7/11/19	42.92	8/27/19	57.05
4/11/19	13.83	5/26/19	24.88	7/12/19	43.37	8/28/19	57.06
4/12/19	14.01	5/27/19	24.89	7/13/19	43.76	8/29/19	57.06
4/13/19	14.19	5/28/19	25.44	7/14/19	44.19	8/30/19	57.06
4/14/19	14.37	5/29/19	25.85	7/15/19	44.62	8/31/19	57.07
		5/30/19	26.35	7/16/19	45.01	9/1/19	57.07
		5/31/19	26.83	7/17/19	45.46	9/2/19	57.08

Date	365 day Cummulative VOC emissions from Fluosolv (tons)	Date	365 day Cummulative VOC emissions from Fluosolv (tons)	Date	365 day Cummulative VOC emissions from Fluosolv (tons)	Date	365 day Cummulative VOC emissions from Fluosolv (tons)	Date	365 day Cummulative VOC emissions from Fluosolv (tons)	Date	365 day Cummulative VOC emissions from Fluosolv (tons)	Date	365 day Cummulative VOC emissions from Fluosolv (tons)	Date	365 day Cummulative VOC emissions from Fluosolv (tons)
9/3/19	57.08	10/20/19	57.28	12/6/19	57.47	1/22/20	57.67	3/9/20	57.68	4/25/20	51.20	6/11/20	38.49	7/28/20	24.60
9/4/19	57.08	10/21/19	57.28	12/7/19	57.48	1/23/20	57.71	3/10/20	57.49	4/26/20	51.16	6/12/20	37.97	7/29/20	24.36
9/5/19	57.09	10/22/19	57.28	12/8/19	57.48	1/24/20	57.74	3/11/20	57.36	4/27/20	51.15	6/13/20	37.45	7/30/20	24.10
9/6/19	57.09	10/23/19	57.29	12/9/19	57.49	1/25/20	57.79	3/12/20	57.20	4/28/20	51.23	6/14/20	36.87	7/31/20	23.81
9/7/19	57.10	10/24/19	57.29	12/10/19	57.49	1/26/20	57.83	3/13/20	56.96	4/29/20	51.28	6/15/20	36.35	8/1/20	23.41
9/8/19	57.10	10/25/19	57.30	12/11/19	57.49	1/27/20	57.89	3/14/20	56.59	4/30/20	51.20	6/16/20	35.84	8/2/20	23.41
9/9/19	57.11	10/26/19	57.30	12/12/19	57.50	1/28/20	57.94	3/15/20	56.26	5/1/20	50.89	6/17/20	35.39	8/3/20	23.55
9/10/19	57.11	10/27/19	57.31	12/13/19	57.50	1/29/20	58.00	3/16/20	56.02	5/2/20	50.58	6/18/20	34.97	8/4/20	23.29
9/11/19	57.11	10/28/19	57.31	12/14/19	57.51	1/30/20	58.07	3/17/20	55.80	5/3/20	50.46	6/19/20	34.55	8/5/20	23.08
9/12/19	57.12	10/29/19	57.31	12/15/19	57.51	1/31/20	58.11	3/18/20	55.58	5/4/20	50.49	6/20/20	34.26	8/6/20	22.83
9/13/19	57.12	10/30/19	57.32	12/16/19	57.51	2/1/20	58.13	3/19/20	55.30	5/5/20	50.59	6/21/20	34.33	8/7/20	22.50
9/14/19	57.13	10/31/19	57.32	12/17/19	57.52	2/2/20	58.20	3/20/20	54.94	5/6/20	50.56	6/22/20	34.46	8/8/20	22.12
9/15/19	57.13	11/1/19	57.33	12/18/19	57.52	2/3/20	58.28	3/21/20	54.64	5/7/20	50.45	6/23/20	34.08	8/9/20	21.85
9/16/19	57.13	11/2/19	57.33	12/19/19	57.53	2/4/20	58.34	3/22/20	54.41	5/8/20	50.05	6/24/20	33.76	8/10/20	21.72
9/17/19	57.14	11/3/19	57.33	12/20/19	57.53	2/5/20	58.42	3/23/20	54.22	5/9/20	49.68	6/25/20	33.34	8/11/20	21.47
9/18/19	57.14	11/4/19	57.34	12/21/19	57.54	2/6/20	58.47	3/24/20	53.99	5/10/20	49.58	6/26/20	32.94	8/12/20	21.17
9/19/19	57.15	11/5/19	57.34	12/22/19	57.54	2/7/20	58.47	3/25/20	53.79	5/11/20	49.44	6/27/20	32.50	8/13/20	20.90
9/20/19	57.15	11/6/19	57.35	12/23/19	57.54	2/8/20	58.47	3/26/20	53.56	5/12/20	49.15	6/28/20	32.15	8/14/20	20.53
9/21/19	57.16	11/7/19	57.35	12/24/19	57.55	2/9/20	58.47	3/27/20	53.44	5/13/20	48.73	6/29/20	31.91	8/15/20	20.27
9/22/19	57.16	11/8/19	57.36	12/25/19	57.55	2/10/20	58.55	3/28/20	53.28	5/14/20	48.39	6/30/20	31.62	8/16/20	20.18
9/23/19	57.16	11/9/19	57.36	12/26/19	57.56	2/11/20	58.62	3/29/20	53.17	5/15/20	47.97	7/1/20	31.32	8/17/20	20.04
9/24/19	57.17	11/10/19	57.36	12/27/19	57.56	2/12/20	58.70	3/30/20	53.05	5/16/20	47.50	7/2/20	30.99	8/18/20	19.77
9/25/19	57.17	11/11/19	57.37	12/28/19	57.56	2/13/20	58.78	3/31/20	52.94	5/17/20	47.02	7/3/20	30.99	8/19/20	19.51
9/26/19	57.18	11/12/19	57.37	12/29/19	57.57	2/14/20	58.85	4/1/20	52.85	5/18/20	46.66	7/4/20	30.99	8/20/20	19.35
9/27/19	57.18	11/13/19	57.38	12/30/19	57.57	2/15/20	58.90	4/2/20	52.72	5/19/20	46.29	7/5/20	30.99	8/21/20	19.29
9/28/19	57.18	11/14/19	57.38	12/31/19	57.58	2/16/20	58.95	4/3/20	52.61	5/20/20	45.90	7/6/20	31.09	8/22/20	19.33
9/29/19	57.19	11/15/19	57.39	1/1/20	57.58	2/17/20	58.99	4/4/20	52.45	5/21/20	45.48	7/7/20	30.77	8/23/20	19.42
9/30/19	57.19	11/16/19	57.39	1/2/20	57.59	2/18/20	59.07	4/5/20	52.29	5/22/20	44.91	7/8/20	30.49	8/24/20	19.51
10/1/19	57.20	11/17/19	57.39	1/3/20	57.59	2/19/20	59.22	4/6/20	52.15	5/23/20	44.35	7/9/20	30.09	8/25/20	19.62
10/2/19	57.20	11/18/19	57.40	1/4/20	57.59	2/20/20	59.36	4/7/20	51.99	5/24/20	44.35	7/10/20	29.77	8/26/20	19.74
10/3/19	57.21	11/19/19	57.40	1/5/20	57.60	2/21/20	59.48	4/8/20	51.82	5/25/20	44.43	7/11/20	29.32	8/27/20	19.80
10/4/19	57.21	11/20/19	57.41	1/6/20	57.60	2/22/20	59.57	4/9/20	51.69	5/26/20	44.53	7/12/20	28.94	8/28/20	19.85
10/5/19	57.21	11/21/19	57.41	1/7/20	57.61	2/23/20	59.65	4/10/20	51.54	5/27/20	44.09	7/13/20	28.62	8/29/20	19.88
10/6/19	57.22	11/22/19	57.41	1/8/20	57.61	2/24/20	59.76	4/11/20	51.36	5/28/20	43.69	7/14/20	28.31	8/30/20	19.95
10/7/19	57.22	11/23/19	57.42	1/9/20	57.61	2/25/20	59.85	4/12/20	51.19	5/29/20	43.20	7/15/20	28.02	8/31/20	20.04
10/8/19	57.23	11/24/19	57.42	1/10/20	57.62	2/26/20	60.00	4/13/20	51.16	5/30/20	42.72	7/16/20	27.68	9/1/20	20.12
10/9/19	57.23	11/25/19	57.43	1/11/20	57.62	2/27/20	60.11	4/14/20	51.17	5/31/20	42.22	7/17/20	27.26	9/2/20	20.19
10/10/19	57.23	11/26/19	57.43	1/12/20	57.63	2/28/20	60.27	4/15/20	51.16	6/1/20	41.86	7/18/20	27.01	9/3/20	20.28
10/11/19	57.24	11/27/19	57.44	1/13/20	57.63	2/29/20	60.05	4/16/20	51.19	6/2/20	41.45	7/19/20	26.78	9/4/20	20.35
10/12/19	57.24	11/28/19	57.44	1/14/20	57.64	3/1/20	59.85	4/17/20	51.17	6/3/20	40.96	7/20/20	26.62	9/5/20	20.36
10/13/19	57.25	11/29/19	57.44	1/15/20	57.64	3/2/20	59.57	4/18/20	51.14	6/4/20	40.48	7/21/20	26.37	9/6/20	20.36
10/14/19	57.25	11/30/19	57.45	1/16/20	57.64	3/3/20	59.23	4/19/20	51.17	6/5/20	39.99	7/22/20	26.15	9/7/20	20.36
10/15/19	57.26	12/1/19	57.45	1/17/20	57.65	3/4/20	58.94	4/20/20	51.20	6/6/20	39.51	7/23/20	25.86	9/8/20	20.48
10/16/19	57.26	12/2/19	57.46	1/18/20	57.65	3/5/20	58.60	4/21/20	51.19	6/7/20	39.56	7/24/20	25.56	9/9/20	20.59
10/17/19	57.26	12/3/19	57.46	1/19/20	57.66	3/6/20	58.36	4/22/20	51.21	6/8/20	39.71	7/25/20	25.27	9/10/20	20.70
10/18/19	57.27	12/4/19	57.46	1/20/20	57.66	3/7/20	58.07	4/23/20	51.23	6/9/20	39.33	7/26/20	25.02	9/11/20	20.75
10/19/19	57.27	12/5/19	57.47	1/21/20	57.66	3/8/20	57.88	4/24/20	51.23	6/10/20	38.89	7/27/20	24.82	9/12/20	20.78

Date	365 day Cummulative VOC emissions from Fluosolv (tons)	Date	365 day Cummulative VOC emissions from Fluosolv (tons)	Date	365 day Cummulative VOC emissions from Fluosolv (tons)	Date	365 day Cummulative VOC emissions from Fluosolv (tons)	Date	365 day Cummulative VOC emissions from Fluosolv (tons)	Date	365 day Cummulative VOC emissions from Fluosolv (tons)	Date	365 day Cummulative VOC emissions from Fluosolv (tons)	Date	365 day Cummulative VOC emissions from Fluosolv (tons)
9/13/20	20.85	10/30/20	25.79	12/16/20	29.87	2/1/21	34.29	3/20/21	34.60	5/6/21	35.26	6/22/21	35.85	8/8/21	35.44
9/14/20	20.97	10/31/20	25.79	12/17/20	29.98	2/2/21	34.41	3/21/21	34.69	5/7/21	35.17	6/23/21	35.86	8/9/21	35.54
9/15/20	21.08	11/1/20	25.79	12/18/20	30.12	2/3/21	34.49	3/22/21	34.90	5/8/21	35.22	6/24/21	35.84	8/10/21	35.51
9/16/20	21.20	11/2/20	25.90	12/19/20	30.23	2/4/21	34.59	3/23/21	34.87	5/9/21	35.28	6/25/21	35.84	8/11/21	35.46
9/17/20	21.33	11/3/20	25.98	12/20/20	30.34	2/5/21	34.72	3/24/21	34.90	5/10/21	35.33	6/26/21	35.88	8/12/21	35.43
9/18/20	21.39	11/4/20	26.03	12/21/20	30.48	2/6/21	34.72	3/25/21	34.93	5/11/21	35.31	6/27/21	35.96	8/13/21	35.38
9/19/20	21.41	11/5/20	26.14	12/22/20	30.62	2/7/21	34.72	3/26/21	34.94	5/12/21	35.28	6/28/21	36.03	8/14/21	35.35
9/20/20	21.49	11/6/20	26.21	12/23/20	30.76	2/8/21	34.83	3/27/21	34.84	5/13/21	35.28	6/29/21	36.01	8/15/21	35.39
9/21/20	21.62	11/7/20	26.27	12/24/20	30.76	2/9/21	34.86	3/28/21	34.77	5/14/21	35.22	6/30/21	36.00	8/16/21	35.42
9/22/20	21.74	11/8/20	26.36	12/25/20	30.76	2/10/21	34.89	3/29/21	34.78	5/15/21	35.27	7/1/21	36.03	8/17/21	35.42
9/23/20	21.89	11/9/20	26.47	12/26/20	30.76	2/11/21	34.94	3/30/21	34.80	5/16/21	35.33	7/2/21	36.01	8/18/21	35.40
9/24/20	22.04	11/10/20	26.59	12/27/20	30.76	2/12/21	35.01	3/31/21	34.80	5/17/21	35.38	7/3/21	36.01	8/19/21	35.38
9/25/20	22.16	11/11/20	26.67	12/28/20	30.90	2/13/21	35.03	4/1/21	34.80	5/18/21	35.36	7/4/21	36.01	8/20/21	35.32
9/26/20	22.17	11/12/20	26.81	12/29/20	31.04	2/14/21	35.09	4/2/21	34.66	5/19/21	35.35	7/5/21	36.01	8/21/21	35.26
9/27/20	22.17	11/13/20	26.91	12/30/20	31.20	2/15/21	35.16	4/3/21	34.54	5/20/21	35.35	7/6/21	36.04	8/22/21	35.26
9/28/20	22.30	11/14/20	26.91	12/31/20	31.37	2/16/21	35.23	4/4/21	34.46	5/21/21	35.35	7/7/21	36.08	8/23/21	35.24
9/29/20	22.45	11/15/20	26.91	1/1/21	31.37	2/17/21	35.27	4/5/21	34.53	5/22/21	35.41	7/8/21	36.08	8/24/21	35.22
9/30/20	22.63	11/16/20	27.03	1/2/21	31.38	2/18/21	35.25	4/6/21	34.59	5/23/21	35.53	7/9/21	36.13	8/25/21	35.15
10/1/20	22.75	11/17/20	27.17	1/3/21	31.38	2/19/21	35.23	4/7/21	34.63	5/24/21	35.65	7/10/21	36.05	8/26/21	35.07
10/2/20	22.84	11/18/20	27.27	1/4/21	31.51	2/20/21	35.18	4/8/21	34.67	5/25/21	35.68	7/11/21	36.05	8/27/21	35.04
10/3/20	22.88	11/19/20	27.39	1/5/21	31.67	2/21/21	35.19	4/9/21	34.69	5/26/21	35.66	7/12/21	36.14	8/28/21	34.99
10/4/20	22.96	11/20/20	27.50	1/6/21	31.82	2/22/21	35.22	4/10/21	34.74	5/27/21	35.66	7/13/21	36.13	8/29/21	34.99
10/5/20	23.07	11/21/20	27.58	1/7/21	31.99	2/23/21	35.25	4/11/21	34.85	5/28/21	35.78	7/14/21	36.14	8/30/21	34.99

10/6/20	23.19	11/22/20	27.67	1/8/21	32.10	2/24/21	35.28	4/12/21	35.03	5/29/21	35.78	7/15/21	36.13	8/31/21	34.96
10/7/20	23.30	11/23/20	27.78	1/9/21	32.18	2/25/21	35.26	4/13/21	35.06	5/30/21	35.78	7/16/21	36.10	9/1/21	34.94
10/8/20	23.42	11/24/20	27.91	1/10/21	32.28	2/26/21	35.28	4/14/21	35.15	5/31/21	35.74	7/17/21	36.04	9/2/21	34.91
10/9/20	23.49	11/25/20	28.03	1/11/21	32.41	2/27/21	35.13	4/15/21	35.24	6/1/21	35.68	7/18/21	36.03	9/3/21	34.88
10/10/20	23.50	11/26/20	28.03	1/12/21	32.55	2/28/21	35.01	4/16/21	35.21	6/2/21	35.64	7/19/21	36.11	9/4/21	34.80
10/11/20	23.57	11/27/20	28.03	1/13/21	32.70	3/1/21	35.01	4/17/21	35.18	6/3/21	35.71	7/20/21	36.14	9/5/21	34.80
10/12/20	23.69	11/28/20	28.03	1/14/21	32.82	3/2/21	34.99	4/18/21	35.23	6/4/21	35.77	7/21/21	36.15	9/6/21	34.80
10/13/20	23.86	11/29/20	28.03	1/15/21	32.94	3/3/21	34.96	4/19/21	35.24	6/5/21	35.77	7/22/21	36.15	9/7/21	34.85
10/14/20	24.05	11/30/20	28.15	1/16/21	33.00	3/4/21	34.92	4/20/21	35.24	6/6/21	35.77	7/23/21	36.13	9/8/21	34.79
10/15/20	24.18	12/1/20	28.27	1/17/21	33.11	3/5/21	34.84	4/21/21	35.28	6/7/21	35.76	7/24/21	36.07	9/9/21	34.72
10/16/20	24.31	12/2/20	28.39	1/18/21	33.25	3/6/21	34.74	4/22/21	35.32	6/8/21	35.71	7/25/21	36.02	9/10/21	34.65
10/17/20	24.31	12/3/20	28.51	1/19/21	33.37	3/7/21	34.66	4/23/21	35.35	6/9/21	35.69	7/26/21	36.05	9/11/21	34.59
10/18/20	24.31	12/4/20	28.63	1/20/21	33.50	3/8/21	34.65	4/24/21	35.27	6/10/21	35.67	7/27/21	36.00	9/12/21	34.61
10/19/20	24.46	12/5/20	28.70	1/21/21	33.63	3/9/21	34.63	4/25/21	35.21	6/11/21	35.67	7/28/21	35.94	9/13/21	34.59
10/20/20	24.59	12/6/20	28.80	1/22/21	33.74	3/10/21	34.62	4/26/21	35.31	6/12/21	35.64	7/29/21	35.90	9/14/21	34.52
10/21/20	24.74	12/7/20	28.96	1/23/21	33.71	3/11/21	34.59	4/27/21	35.41	6/13/21	35.64	7/30/21	35.85	9/15/21	34.49
10/22/20	24.90	12/8/20	29.12	1/24/21	33.66	3/12/21	34.56	4/28/21	35.41	6/14/21	35.78	7/31/21	35.75	9/16/21	34.41
10/23/20	24.99	12/9/20	29.23	1/25/21	33.77	3/13/21	34.54	4/29/21	35.40	6/15/21	35.85	8/1/21	35.77	9/17/21	34.31
10/24/20	25.05	12/10/20	29.36	1/26/21	33.87	3/14/21	34.60	4/30/21	35.41	6/16/21	35.83	8/2/21	35.83	9/18/21	34.25
10/25/20	25.13	12/11/20	29.44	1/27/21	33.98	3/15/21	34.68	5/1/21	35.41	6/17/21	35.80	8/3/21	35.77	9/19/21	34.27
10/26/20	25.24	12/12/20	29.49	1/28/21	34.06	3/16/21	34.66	5/2/21	35.41	6/18/21	35.75	8/4/21	35.70	9/20/21	34.24
10/27/20	25.38	12/13/20	29.57	1/29/21	34.13	3/17/21	34.64	5/3/21	35.46	6/19/21	35.78	8/5/21	35.64	9/21/21	34.18
10/28/20	25.56	12/14/20	29.71	1/30/21	34.13	3/18/21	34.63	5/4/21	35.44	6/20/21	35.87	8/6/21	35.57	9/22/21	34.14
10/29/20	25.68	12/15/20	29.77	1/31/21	34.19	3/19/21	34.59	5/5/21	35.34	6/21/21	35.88	8/7/21	35.44	9/23/21	34.04

Date	365 day Cummulative VOC emissions from Fluosolv (tons)	Date	365 day Cummulative VOC emissions from Fluosolv (tons)	Date	365 day Cummulative VOC emissions from Fluosolv (tons)	Date	365 day Cummulative VOC emissions from Fluosolv (tons)	Date	365 day Cummulative VOC emissions from Fluosolv (tons)
9/24/21	33.92	11/10/21	32.62	12/27/21	32.27	2/12/22	32.36	3/31/22	32.56
9/25/21	33.80	11/11/21	32.65	12/28/21	32.22	2/13/22	32.37	4/1/22	32.61
9/26/21	33.80	11/12/21	32.60	12/29/21	32.21	2/14/22	32.39	4/2/22	32.61
9/27/21	33.83	11/13/21	32.58	12/30/21	32.16	2/15/22	32.41	4/3/22	32.61
9/28/21	33.74	11/14/21	32.65	12/31/21	31.99	2/16/22	32.43	4/4/22	32.78
9/29/21	33.62	11/15/21	32.74	1/1/22	31.99	2/17/22	32.43	4/5/22	32.78
9/30/21	33.46	11/16/21	32.70	1/2/22	31.99	2/18/22	32.43	4/6/22	32.76
10/1/21	33.37	11/17/21	32.64	1/3/22	32.08	2/19/22	32.41	4/7/22	32.60
10/2/21	33.28	11/18/21	32.60	1/4/22	32.08	2/20/22	32.45	4/8/22	32.47
10/3/21	33.27	11/19/21	32.54	1/5/22	32.06	2/21/22	32.49	4/9/22	32.38
10/4/21	33.24	11/20/21	32.46	1/6/22	32.04	2/22/22	32.49	4/10/22	32.33
10/5/21	33.20	11/21/21	32.44	1/7/22	32.00	2/23/22	32.46	4/11/22	32.22
10/6/21	33.16	11/22/21	32.45	1/8/22	32.01	2/24/22	32.43	4/12/22	32.04
10/7/21	33.12	11/23/21	32.44	1/9/22	32.06	2/25/22	32.43	4/13/22	31.87
10/8/21	33.05	11/24/21	32.41	1/10/22	32.12	2/26/22	32.29	4/14/22	31.68
10/9/21	33.01	11/25/21	32.29	1/11/22	32.13	2/27/22	32.29	4/15/22	31.51
10/10/21	33.06	11/26/21	32.29	1/12/22	32.13	2/28/22	32.43	4/16/22	31.43
10/11/21	33.05	11/27/21	32.29	1/13/22	32.10	3/1/22	32.44	4/17/22	31.39
10/12/21	32.99	11/28/21	32.29	1/14/22	32.09	3/2/22	32.45	4/18/22	31.28
10/13/21	32.89	11/29/21	32.40	1/15/22	32.10	3/3/22	32.42	4/19/22	31.18
10/14/21	32.77	11/30/21	32.42	1/16/22	32.15	3/4/22	32.41	4/20/22	31.07
10/15/21	32.70	12/1/21	32.40	1/17/22	32.17	3/5/22	32.33	4/21/22	30.94
10/16/21	32.59	12/2/21	32.41	1/18/22	32.16	3/6/22	32.30	4/22/22	30.80
10/17/21	32.64	12/3/21	32.40	1/19/22	32.17	3/7/22	32.41	4/23/22	30.66
10/18/21	32.73	12/4/21	32.35	1/20/22	32.17	3/8/22	32.43	4/24/22	30.66
10/19/21	32.70	12/5/21	32.38	1/21/22	32.16	3/9/22	32.41	4/25/22	30.66
10/20/21	32.66	12/6/21	32.42	1/22/22	32.10	3/10/22	32.39	4/26/22	30.51
10/21/21	32.61	12/7/21	32.37	1/23/22	32.21	3/11/22	32.42	4/27/22	30.34
10/22/21	32.53	12/8/21	32.35	1/24/22	32.32	3/12/22	32.30	4/28/22	30.17
10/23/21	32.53	12/9/21	32.39	1/25/22	32.31	3/13/22	32.21	4/29/22	30.04
10/24/21	32.56	12/10/21	32.36	1/26/22	32.28	3/14/22	32.27	4/30/22	29.93
10/25/21	32.57	12/11/21	32.38	1/27/22	32.24	3/15/22	32.25		
10/26/21	32.58	12/12/21	32.45	1/28/22	32.20	3/16/22	32.27		
10/27/21	32.57	12/13/21	32.51	1/29/22	32.18	3/17/22	32.27		
10/28/21	32.52	12/14/21	32.50	1/30/22	32.25	3/18/22	32.30		
10/29/21	32.46	12/15/21	32.56	1/31/22	32.31	3/19/22	32.19		
10/30/21	32.41	12/16/21	32.59	2/1/22	32.28	3/20/22	32.15		
10/31/21	32.50	12/17/21	32.59	2/2/22	32.21	3/21/22	32.23		
11/1/21	32.60	12/18/21	32.55	2/3/22	32.19	3/22/22	32.21		
11/2/21	32.59	12/19/21	32.55	2/4/22	32.14	3/23/22	32.28		
11/3/21	32.60	12/20/21	32.53	2/5/22	32.08	3/24/22	32.29		
11/4/21	32.63	12/21/21	32.48	2/6/22	32.18	3/25/22	32.29		
11/5/21	32.59	12/22/21	32.40	2/7/22	32.32	3/26/22	32.16		
11/6/21	32.59	12/23/21	32.27	2/8/22	32.34	3/27/22	32.16		
11/7/21	32.63	12/24/21	32.27	2/9/22	32.38	3/28/22	32.34		
11/8/21	32.64	12/25/21	32.27	2/10/22	32.44	3/29/22	32.43		
11/9/21	32.64	12/26/21	32.27	2/11/22	32.42	3/30/22	32.49		

Date	Highest 365-day rolling average ambient air concentrations of tDCE monitored around Water Gremlin (micrograms per cubic meter)
3/1/20	40.1
3/4/20	40.2
3/7/20	38.2
3/10/20	38.7
3/13/20	37.1
3/16/20	36.8
3/19/20	36.6
3/22/20	36.3
3/25/20	35.4
3/28/20	35.4
3/31/20	36.2
4/3/20	36.1
4/6/20	35.4
4/9/20	35.2
4/12/20	34.9
4/15/20	34.9
4/18/20	34.9
4/21/20	35.4
4/24/20	35.7
4/27/20	35.2
4/30/20	34.3
5/3/20	34.6
5/6/20	34.6
5/9/20	34.6
5/12/20	35.0
5/15/20	35.0
5/18/20	34.1
5/21/20	30.1
5/27/20	29.6
5/30/20	29.6
6/2/20	28.6
6/5/20	28.2
6/8/20	28.3
6/11/20	27.5
6/14/20	25.9
6/17/20	25.9
6/20/20	20.5
6/23/20	20.4
6/26/20	19.7
6/29/20	17.7

Date	Highest 365-day rolling average ambient air concentrations of tDCE monitored around Water Gremlin (micrograms per cubic meter)
7/8/20	16.2
7/11/20	13.7
7/14/20	13.4
7/17/20	13.4
7/20/20	13.7
7/23/20	14.0
7/26/20	13.7
7/29/20	13.8
8/1/20	13.7
8/4/20	13.7
8/7/20	13.7
8/10/20	9.3
8/13/20	8.8
8/16/20	8.9
8/19/20	8.4
8/22/20	8.1
8/25/20	8.6
8/28/20	8.6
8/31/20	8.6
9/3/20	8.6
9/9/20	8.7
9/12/20	8.7
9/15/20	8.7
9/18/20	8.9
9/21/20	8.9
9/24/20	8.9
9/27/20	8.9
9/30/20	8.9
10/3/20	8.9
10/6/20	8.7
10/9/20	8.7
10/12/20	8.7
10/15/20	8.7
10/18/20	8.5
10/21/20	8.5
10/24/20	8.5
10/27/20	8.5
10/30/20	8.5
11/2/20	8.5
11/5/20	8.6
11/8/20	9.2
11/11/20	9.3
11/14/20	9.3
11/17/20	9.3
11/20/20	9.3
11/23/20	9.4
12/2/20	9.5

Date	Highest 365-day rolling average ambient air concentrations of tDCE monitored around Water Gremlin (micrograms per cubic meter)
12/5/20	9.5
12/8/20	9.6
12/11/20	9.6
12/14/20	9.6
12/17/20	10.0
12/20/20	10.0
12/23/20	10.0
12/29/20	10.1
1/4/21	10.2
1/7/21	10.2
1/10/21	10.2
1/13/21	11.1
1/16/21	11.1
1/19/21	11.1
1/22/21	11.1
1/25/21	11.1
1/28/21	11.6
1/31/21	11.6
2/3/21	11.6
2/6/21	11.6
2/9/21	11.6
2/12/21	11.6
2/15/21	11.6
2/18/21	11.6
2/21/21	12.0
2/24/21	12.0
2/27/21	12.0
3/2/21	12.0
3/5/21	12.0
3/8/21	12.4
3/11/21	12.0
3/14/21	13.4
3/17/21	13.5
3/20/21	13.4
3/23/21	13.6
3/26/21	14.3
3/29/21	14.3
4/1/21	13.4
4/7/21	13.6
4/10/21	13.6
4/13/21	13.6
4/16/21	13.6
4/19/21	13.6
4/22/21	13.1
4/25/21	13.3
4/28/21	13.5
5/1/21	13.5

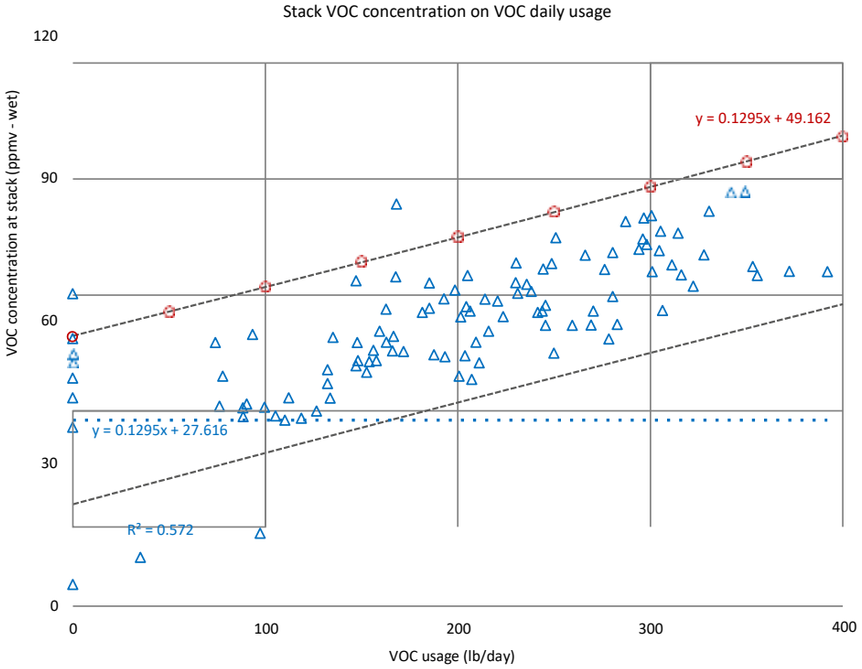
Date	Highest 365-day rolling average ambient air concentrations of tDCE monitored around Water Gremlin (micrograms per cubic meter)
5/4/21	13.1
5/7/21	13.2
5/10/21	13.5
5/13/21	12.8
5/16/21	13.0
5/25/21	12.5
6/3/21	12.5
6/6/21	12.5
6/9/21	12.6
6/12/21	12.6
6/15/21	13.7
6/18/21	13.8
6/21/21	13.8
6/24/21	13.8
6/27/21	14.1
6/30/21	13.7
7/6/21	13.7
7/9/21	13.9
7/12/21	14.0
7/15/21	14.3
7/18/21	14.3
7/21/21	14.5
7/24/21	14.1
7/27/21	15.3
7/30/21	15.2
8/2/21	15.2
8/5/21	15.2
8/8/21	15.6
8/11/21	15.6
8/14/21	15.3
8/17/21	15.1
8/20/21	15.1
8/23/21	15.3
8/26/21	15.2
8/29/21	15.2
9/1/21	15.7
9/7/21	15.7
9/10/21	15.6
9/13/21	15.9
9/16/21	15.9
9/18/21	15.8
9/22/21	15.9
9/25/21	15.9
9/28/21	16.4
10/4/21	16.6
10/7/21	18.2
10/10/21	18.2

Date	Highest 365-day rolling average ambient air concentrations of tDCE monitored around Water Gremlin (micrograms per cubic meter)
10/13/21	18.3
10/16/21	18.5
10/19/21	18.6
10/25/21	19.8
10/28/21	19.8
10/31/21	19.8
11/3/21	19.9
11/6/21	20.0
11/9/21	20.4
11/12/21	20.4
11/15/21	21.0
11/18/21	21.0
11/21/21	21.0
11/30/21	20.7
12/3/21	20.7
12/6/21	20.6
12/9/21	20.6
12/12/21	20.6
12/15/21	20.6
12/18/21	20.6
12/21/21	20.6
12/27/21	20.8
12/29/21	20.7
1/2/22	20.5
1/5/22	20.5
1/8/22	20.0
1/11/22	20.0
1/14/22	19.2
1/17/22	19.3
1/20/22	19.3
1/23/22	19.3
1/26/22	19.3
1/29/22	18.7
2/1/22	18.7
2/4/22	18.7
2/7/22	18.7
2/10/22	18.7
2/13/22	18.7
2/16/22	18.7
2/19/22	18.7
2/22/22	18.3
2/25/22	18.3
3/1/22	18.3
3/3/22	18.6
3/6/22	18.6
3/9/22	18.1
3/12/22	18.1

Date	Highest 365-day rolling average ambient air concentrations of tDCE monitored around Water Gremlin (micrograms per cubic meter)
3/15/22	16.6
3/18/22	16.5
3/21/22	18.4
3/24/22	18.2
3/27/22	17.4

Attachment 7. Correlation of Solvent Usage Versus CEMS Readings at the Stack

Date		Used VOC from t-DCE coatings (lb/day)	THC CEM (ppmvw) as t-DCE
2/7/2020	1	0.00	38.50
5/1/2020	1	0.00	33.40
5/2/2020	1	0.00	5.60
5/8/2020	1	0.00	60.30
5/15/2020	1	0.00	25.80
5/22/2020	1	0.00	42.50
5/28/2020	1	0.00	44.80
5/29/2020	1	0.00	48.70
1/30/2020	1	126.54	30.00
1/31/2020	1	96.45	18.30
2/1/2020	1	35.10	12.60
2/2/2020	1	132.39	37.10
2/3/2020	1	156.25	45.70
2/4/2020	1	132.24	40.70
2/5/2020	1	152.60	40.00
2/6/2020	1	110.21	27.60
2/11/2020	1	135.25	49.00
2/12/2020	1	162.94	47.80
2/13/2020	1	159.38	50.60
2/14/2020	1	147.06	41.70
2/15/2020	1	88.24	30.80
2/16/2020	1	105.31	28.70
2/17/2020	1	90.39	31.80
2/19/2020	1	294.06	71.80
2/20/2020	1	280.53	71.00
2/21/2020	1	230.29	68.30
2/22/2020	1	187.60	44.50
2/23/2020	1	166.55	49.30
2/24/2020	1	206.44	55.80
2/25/2020	1	185.16	63.10
2/27/2020	1	231.11	60.40
2/28/2020	1	311.31	67.80
2/29/2020	1	243.84	55.80
3/1/2020	1	248.70	68.10
3/2/2020	1	287.22	79.00
3/3/2020	1	298.12	73.10
3/4/2020	1	330.64	81.70
3/5/2020	1	304.75	71.50
3/6/2020	1	251.00	74.80



SUMMARY OUTPUT for Subset: Stack VOC concentration (ppmvw) on VOC usage (lb/day)

Regression Statistics	
Multiple R	0.7563
R Square	0.5720
Adj. R^2	0.5679
Std Error	11
N	107

ANOVA

Matirx X'X

107	21187
21187.2	5157625

Matrix $(X'X)^{-1}$

0.05009	-2.06E-04
-2.06E-04	1.04E-06

At α = 0.05, 2-tail t is: 1.983

Two equations are shown in this scatter plot. At the lower-left corner is one for the mean prediction. The other one, at the upper-right corner, is for the upper bound, which is very close to the upper end of the 95% confidence interval of a new VOC concentration value (ppmvw) in response to a new value of VOC usage. The upper bound equation is convenient to use in supporting the air permit action.

Note that the data analyzed here were from 1/30/2020 through 6/3/2020 (the printout of this worksheet lists only a portion of the data).

$X_h'(X'X)^{-1}$		$X_h'(X'X)^{-1}X_h$	Constant	New Usage	Ypred
0.0501	-0.0002	0.0501	1	0	27.62
0.0398	-0.0002	0.0321	1	50	34.09
0.0295	-0.0001	0.0193	1	100	40.57
0.0192	0.0000	0.0117	1	150	47.04
0.0089	0.0000	0.0093	1	200	53.52
-0.0014	0.0001	0.0122	1	250	59.99
-0.0116	0.0001	0.0202	1	300	66.47
-0.0219	0.0002	0.0334	1	350	72.94
-0.0322	0.0002	0.0517	1	400	79.42

95% LCL	95% UCL	95% LPL	95% UPL	Upper bound	UPL-Ypred
22.86	32.38	5.83	49.41	49.16	21.79
30.28	37.90	12.49	55.69	55.64	21.60
37.61	43.52	19.10	62.04	62.11	21.47
44.74	49.35	25.65	68.43	68.59	21.39
51.46	55.57	32.15	74.88	75.06	21.36
57.65	62.34	38.60	81.38	81.54	21.39
63.45	69.49	44.99	87.94	88.01	21.48
69.06	76.82	51.33	94.56	94.49	21.62
74.58	84.25	57.61	101.22	100.96	21.81

Mean y-shift = 21.546

For the upper bound on stack VOC conc

Intercept	49.162
VOC usage	0.1295

Ref.: "Applied Linear Statistical Models," 5th ed., by Kutner, Nachtsheim, Neter, and Li. © 2005 The McGraw-Hill Companies.

3/7/2020	1	203.76	44.30
3/8/2020	1	214.06	58.90
3/9/2020	1	348.91	86.90
3/10/2020	1	341.69	86.70
3/11/2020	1	305.31	76.50
3/12/2020	1	296.14	74.50
3/13/2020	1	238.20	60.90
3/14/2020	1	76.24	31.20
3/15/2020	1	168.10	83.50
3/18/2020	1	300.59	80.50
3/19/2020	1	296.69	79.90
3/20/2020	1	77.93	39.00
3/23/2020	1	314.46	76.00
3/24/2020	1	230.08	63.20
3/25/2020	1	235.73	62.80
3/26/2020	1	245.62	57.30
3/27/2020	1	201.53	54.30
3/28/2020	1	148.03	43.00
3/29/2020	1	181.59	55.50
3/30/2020	1	220.65	58.40
3/31/2020	1	244.38	66.70
4/1/2020	1	276.35	66.60
4/2/2020	1	266.14	70.30
4/3/2020	1	241.50	55.50
4/4/2020	1	167.75	64.70
4/5/2020	1	133.67	33.30
4/6/2020	1	204.34	57.00
4/7/2020	1	215.99	50.60
4/8/2020	1	185.16	56.60
4/9/2020	1	147.83	47.70
4/13/2020	1	280.53	59.60
4/14/2020	1	192.73	59.00
4/15/2020	1	162.77	56.30
4/17/2020	1	153.99	42.80
4/18/2020	1	99.62	31.00
4/19/2020	1	193.37	44.00
4/20/2020	1	223.61	54.40
4/21/2020	1	171.86	45.40
4/22/2020	1	198.43	61.30
4/23/2020	1	205.15	65.00
4/24/2020	1	166.16	45.50
4/25/2020	1	112.16	33.40

4/26/2020	1	88.40	28.50
4/27/2020	1	157.73	43.00
4/28/2020	1	327.85	70.40
4/29/2020	1	278.50	48.60
4/30/2020	1	209.51	47.80
5/3/2020	1	118.73	28.10
5/4/2020	1	270.45	55.80
5/5/2020	1	372.15	66.10
5/6/2020	1	353.19	67.40
5/7/2020	1	316.16	65.20
5/11/2020	1	306.34	56.00
5/12/2020	1	282.77	52.40
5/13/2020	1	249.99	44.90
5/14/2020	1	259.43	52.10
5/17/2020	1	74.03	47.70
5/18/2020	1	269.23	52.20
5/19/2020	1	301.02	66.00
5/20/2020	1	245.63	52.10
5/21/2020	1	200.72	39.00
5/25/2020	1	147.15	63.70
5/26/2020	1	211.19	42.40
5/27/2020	1	207.27	38.20
5/31/2020	1	93.42	49.80
6/1/2020	1	391.97	66.00
6/2/2020	1	322.33	62.30
6/3/2020	1	355.62	65.00

$X_h'(X'X)^{-1}$		$X_h'(X'X)^{-1}X_h$	Yfitted	95% LPL	95% UPL	Outside = 1	Residual	Std resid	residual	deleted resid	DFFITS	COOK's D
0.0501	-0.0002	0.0501	27.62	5.83	49.41		10.88	1.0197	1.0413	1.0417	0.2392	0.0286
0.0501	-0.0002	0.0501	27.62	5.83	49.41		5.78	0.5419	0.5533	0.5515	0.1266	0.0081
0.0501	-0.0002	0.0501	27.62	5.83	49.41	1	-22.02	-2.0627	-2.1063	-2.1420	-0.4919	0.1170
0.0501	-0.0002	0.0501	27.62	5.83	49.41	1	32.68	3.0621	3.1269	3.2679	0.7504	0.2578
0.0501	-0.0002	0.0501	27.62	5.83	49.41		-1.82	-0.1702	-0.1738	-0.1730	-0.0397	0.0008
0.0501	-0.0002	0.0501	27.62	5.83	49.41		14.88	1.3944	1.4240	1.4311	0.3286	0.0535
0.0501	-0.0002	0.0501	27.62	5.83	49.41		17.18	1.6099	1.6440	1.6576	0.3806	0.0713
0.0501	-0.0002	0.0501	27.62	5.83	49.41		21.08	1.9753	2.0171	2.0476	0.4702	0.1073
0.0241	-0.0001	0.0147	44.00	22.58	65.42		-14.00	-1.3119	-1.3154	-1.3201	-0.1610	0.0129
0.0302	-0.0001	0.0201	40.11	18.63	61.58	1	-21.81	-2.0431	-2.0541	-2.0867	-0.2986	0.0432
0.0429	-0.0002	0.0369	32.16	10.51	53.82		-19.56	-1.8327	-1.8587	-1.8810	-0.3683	0.0662
0.0228	-0.0001	0.0138	44.76	23.35	66.17		-7.66	-0.7177	-0.7193	-0.7177	-0.0850	0.0036
0.0179	0.0000	0.0112	47.85	26.47	69.23		-2.15	-0.2015	-0.2017	-0.2007	-0.0213	0.0002
0.0229	-0.0001	0.0138	44.74	23.33	66.15		-4.04	-0.3786	-0.3794	-0.3779	-0.0448	0.0010
0.0187	0.0000	0.0115	47.38	25.99	68.76		-7.38	-0.6912	-0.6919	-0.6902	-0.0744	0.0028
0.0274	-0.0001	0.0174	41.89	20.44	63.34		-14.29	-1.3386	-1.3440	-1.3492	-0.1793	0.0160
0.0223	-0.0001	0.0134	45.13	23.72	66.54		3.87	0.3625	0.3632	0.3617	0.0422	0.0009
0.0166	0.0000	0.0106	48.72	27.34	70.09		-0.92	-0.0859	-0.0860	-0.0856	-0.0089	0.0000
0.0173	0.0000	0.0109	48.26	26.88	69.64		2.34	0.2196	0.2197	0.2187	0.0230	0.0003
0.0198	-0.0001	0.0120	46.66	25.27	68.05		-4.96	-0.4647	-0.4653	-0.4636	-0.0512	0.0013
0.0319	-0.0001	0.0219	39.04	17.55	60.54		-8.24	-0.7723	-0.7772	-0.7757	-0.1160	0.0068
0.0284	-0.0001	0.0183	41.25	19.80	62.71		-12.55	-1.1761	-1.1814	-1.1837	-0.1615	0.0130
0.0315	-0.0001	0.0214	39.32	17.83	60.81		-7.52	-0.7047	-0.7090	-0.7073	-0.1045	0.0055
-0.0104	0.0001	0.0189	65.70	44.23	87.16		6.10	0.5717	0.5745	0.5726	0.0796	0.0032
-0.0076	0.0001	0.0164	63.94	42.51	85.38		7.06	0.6610	0.6634	0.6616	0.0855	0.0037
0.0027	0.0000	0.0104	57.44	36.06	78.81		10.86	1.0175	1.0180	1.0182	0.1045	0.0055
0.0115	0.0000	0.0095	51.91	30.55	73.27		-7.41	-0.6942	-0.6942	-0.6925	-0.0677	0.0023
0.0158	0.0000	0.0104	49.18	27.81	70.56		0.12	0.0109	0.0109	0.0108	0.0011	0.0000
0.0076	0.0000	0.0094	54.35	32.99	75.71		1.45	0.1358	0.1358	0.1352	0.0132	0.0001
0.0120	0.0000	0.0095	51.59	30.23	72.96		11.51	1.0780	1.0780	1.0788	0.1058	0.0056
0.0025	0.0000	0.0105	57.55	36.17	78.92		2.85	0.2674	0.2676	0.2664	0.0274	0.0004
-0.0140	0.0001	0.0227	67.93	46.43	89.44		-0.13	-0.0123	-0.0124	-0.0123	-0.0019	0.0000
-0.0001	0.0000	0.0115	59.19	37.81	80.58		-3.39	-0.3180	-0.3183	-0.3170	-0.0342	0.0006
-0.0011	0.0001	0.0120	59.82	38.43	81.21		8.28	0.7755	0.7765	0.7750	0.0855	0.0037
-0.0090	0.0001	0.0176	64.81	43.36	86.26		14.19	1.3293	1.3348	1.3399	0.1794	0.0160
-0.0113	0.0001	0.0198	66.22	44.75	87.70		6.88	0.6443	0.6477	0.6459	0.0917	0.0042
-0.0179	0.0001	0.0276	70.43	48.88	91.99		11.27	1.0555	1.0653	1.0660	0.1797	0.0161
-0.0126	0.0001	0.0212	67.08	45.59	88.57		4.42	0.4139	0.4164	0.4148	0.0610	0.0019
-0.0016	0.0001	0.0123	60.12	38.73	81.52		14.68	1.3752	1.3772	1.3832	0.1541	0.0118

0.0082	0.0000	0.0094	54.00	32.64	75.37		-9.70	-0.9091	-0.9091	-0.9083	-0.0884	0.0039
0.0060	0.0000	0.0096	55.34	33.97	76.70		3.56	0.3338	0.3339	0.3325	0.0328	0.0005
-0.0217	0.0002	0.0330	72.80	51.19	94.41		14.10	1.3210	1.3370	1.3421	0.2480	0.0305
-0.0202	0.0001	0.0308	71.87	50.28	93.46		14.83	1.3898	1.4050	1.4116	0.2516	0.0314
-0.0127	0.0001	0.0213	67.15	45.66	88.64		9.35	0.8756	0.8809	0.8800	0.1298	0.0084
-0.0108	0.0001	0.0194	65.97	44.50	87.44		8.53	0.7995	0.8035	0.8022	0.1127	0.0064
0.0011	0.0000	0.0110	58.46	37.08	79.85		2.44	0.2282	0.2284	0.2274	0.0240	0.0003
0.0344	-0.0001	0.0248	37.49	15.96	59.02		-6.29	-0.5893	-0.5939	-0.5921	-0.0943	0.0045
0.0155	0.0000	0.0103	49.39	28.01	70.76	1	34.11	3.1962	3.1975	3.3495	0.3413	0.0531
-0.0118	0.0001	0.0203	66.54	45.06	88.02		13.96	1.3076	1.3148	1.3194	0.1898	0.0179
-0.0110	0.0001	0.0195	66.04	44.57	87.51		13.86	1.2987	1.3054	1.3098	0.1845	0.0169
0.0341	-0.0001	0.0243	37.71	16.19	59.23		1.29	0.1211	0.1220	0.1214	0.0192	0.0002
-0.0146	0.0001	0.0234	68.34	46.83	89.85		7.66	0.7177	0.7228	0.7212	0.1117	0.0063
0.0027	0.0000	0.0104	57.41	36.04	78.79		5.79	0.5423	0.5425	0.5407	0.0555	0.0015
0.0016	0.0000	0.0108	58.14	36.76	79.52		4.66	0.4363	0.4366	0.4349	0.0455	0.0010
-0.0005	0.0000	0.0117	59.42	38.04	80.81		-2.12	-0.1990	-0.1992	-0.1983	-0.0216	0.0002
0.0086	0.0000	0.0094	53.71	32.35	75.08		0.59	0.0549	0.0549	0.0546	0.0053	0.0000
0.0196	-0.0001	0.0119	46.79	25.40	68.18		-3.79	-0.3548	-0.3552	-0.3537	-0.0389	0.0008
0.0127	0.0000	0.0096	51.13	29.77	72.50		4.37	0.4092	0.4093	0.4077	0.0402	0.0008
0.0047	0.0000	0.0099	56.19	34.82	77.56		2.21	0.2070	0.2070	0.2061	0.0206	0.0002
-0.0002	0.0000	0.0116	59.26	37.88	80.65		7.44	0.6967	0.6974	0.6957	0.0753	0.0028
-0.0068	0.0001	0.0157	63.40	41.97	84.83		3.20	0.2995	0.3004	0.2991	0.0378	0.0007
-0.0047	0.0001	0.0142	62.08	40.67	83.50		8.22	0.7699	0.7718	0.7703	0.0923	0.0043
0.0004	0.0000	0.0113	58.89	37.51	80.28		-3.39	-0.3177	-0.3180	-0.3166	-0.0339	0.0006
0.0156	0.0000	0.0103	49.34	27.97	70.71		15.36	1.4390	1.4397	1.4471	0.1476	0.0108
0.0226	-0.0001	0.0136	44.93	23.52	66.34		-11.63	-1.0892	-1.0916	-1.0926	-0.1285	0.0082
0.0080	0.0000	0.0094	54.08	32.71	75.44		2.92	0.2737	0.2737	0.2725	0.0265	0.0004
0.0056	0.0000	0.0097	55.59	34.22	76.95		-4.99	-0.4672	-0.4673	-0.4655	-0.0460	0.0011
0.0120	0.0000	0.0095	51.59	30.23	72.96		5.01	0.4690	0.4690	0.4672	0.0458	0.0011
0.0197	-0.0001	0.0120	46.76	25.37	68.15		0.94	0.0881	0.0882	0.0878	0.0097	0.0000
-0.0076	0.0001	0.0164	63.95	42.51	85.38		-4.35	-0.4071	-0.4085	-0.4069	-0.0526	0.0014
0.0104	0.0000	0.0094	52.58	31.21	73.94		6.42	0.6019	0.6019	0.6001	0.0584	0.0017
0.0166	0.0000	0.0106	48.69	27.32	70.07		7.61	0.7125	0.7130	0.7113	0.0738	0.0027
0.0184	0.0000	0.0114	47.56	26.17	68.94		-4.76	-0.4457	-0.4462	-0.4444	-0.0476	0.0011
0.0296	-0.0001	0.0194	40.52	19.05	61.99		-9.52	-0.8917	-0.8962	-0.8953	-0.1260	0.0079
0.0103	0.0000	0.0094	52.66	31.29	74.02		-8.66	-0.8111	-0.8111	-0.8097	-0.0787	0.0031
0.0041	0.0000	0.0100	56.57	35.20	77.94		-2.17	-0.2036	-0.2037	-0.2027	-0.0204	0.0002
0.0147	0.0000	0.0101	49.87	28.50	71.24		-4.47	-0.4190	-0.4191	-0.4175	-0.0421	0.0009
0.0093	0.0000	0.0093	53.31	31.95	74.68		7.99	0.7483	0.7482	0.7466	0.0725	0.0026
0.0079	0.0000	0.0094	54.18	32.82	75.55		10.82	1.0134	1.0134	1.0136	0.0987	0.0049
0.0159	0.0000	0.0104	49.13	27.76	70.51		-3.63	-0.3405	-0.3407	-0.3392	-0.0348	0.0006
0.0270	-0.0001	0.0170	42.14	20.70	63.59		-8.74	-0.8189	-0.8221	-0.8208	-0.1080	0.0058

0.0319	-0.0001	0.0218	39.06	17.57	60.56	-10.56	-0.9897	-0.9960	-0.9959	-0.1488	0.0111
0.0176	0.0000	0.0110	48.04	26.66	69.42	-5.04	-0.4724	-0.4727	-0.4710	-0.0497	0.0012
-0.0174	0.0001	0.0269	70.07	48.53	91.62	0.33	0.0306	0.0308	0.0307	0.0051	0.0000
-0.0072	0.0001	0.0161	63.68	42.25	85.12	-15.08	-1.4130	-1.4178	-1.4247	-0.1821	0.0164
0.0070	0.0000	0.0095	54.75	33.38	76.11	-6.95	-0.6509	-0.6509	-0.6491	-0.0635	0.0020
0.0257	-0.0001	0.0159	42.99	21.56	64.42	-14.89	-1.3952	-1.3997	-1.4062	-0.1786	0.0158
-0.0056	0.0001	0.0148	62.64	41.22	84.06	-6.84	-0.6408	-0.6425	-0.6407	-0.0785	0.0031
-0.0265	0.0002	0.0409	75.81	54.11	97.50	-9.71	-0.9097	-0.9244	-0.9238	-0.1907	0.0182
-0.0226	0.0002	0.0344	73.36	51.73	94.98	-5.96	-0.5579	-0.5651	-0.5632	-0.1063	0.0057
-0.0150	0.0001	0.0239	68.56	47.04	90.08	-3.36	-0.3148	-0.3171	-0.3157	-0.0494	0.0012
-0.0129	0.0001	0.0215	67.29	45.80	88.78	-11.29	-1.0576	-1.0641	-1.0648	-0.1580	0.0125
-0.0081	0.0001	0.0168	64.24	42.79	85.68	-11.84	-1.1089	-1.1130	-1.1143	-0.1457	0.0106
-0.0013	0.0001	0.0122	59.99	38.60	81.38	-15.09	-1.4138	-1.4157	-1.4226	-0.1578	0.0123
-0.0033	0.0001	0.0133	61.21	39.81	82.62	-9.11	-0.8538	-0.8555	-0.8544	-0.0991	0.0049
0.0349	-0.0001	0.0253	37.20	15.67	58.74	10.50	0.9834	0.9914	0.9913	0.1598	0.0128
-0.0053	0.0001	0.0146	62.48	41.06	83.90	-10.28	-0.9632	-0.9658	-0.9655	-0.1176	0.0069
-0.0118	0.0001	0.0204	66.60	45.12	88.08	-0.60	-0.0561	-0.0564	-0.0561	-0.0081	0.0000
-0.0005	0.0000	0.0117	59.43	38.04	80.81	-7.33	-0.6863	-0.6871	-0.6853	-0.0746	0.0028
0.0088	0.0000	0.0094	53.61	32.25	74.97	-14.61	-1.3688	-1.3687	-1.3745	-0.1336	0.0088
0.0198	-0.0001	0.0120	46.67	25.28	68.06	17.03	1.5953	1.5974	1.6095	0.1776	0.0155
0.0066	0.0000	0.0095	54.97	33.60	76.33	-12.57	-1.1772	-1.1773	-1.1795	-0.1157	0.0067
0.0074	0.0000	0.0094	54.46	33.09	75.82	-16.26	-1.5232	-1.5232	-1.5330	-0.1496	0.0110
0.0309	-0.0001	0.0207	39.71	18.23	61.20	10.09	0.9449	0.9503	0.9499	0.1381	0.0096
-0.0306	0.0002	0.0484	78.38	56.60	100.15	-12.38	-1.1596	-1.1831	-1.1854	-0.2675	0.0356
-0.0162	0.0001	0.0254	69.36	47.82	90.89	-7.06	-0.6612	-0.6666	-0.6649	-0.1073	0.0058
-0.0231	0.0002	0.0352	73.67	52.03	95.30	-8.67	-0.8122	-0.8229	-0.8217	-0.1568	0.0123

Size of matrix X (cells B3:C109): 107 x 2. → Sum = 2

Another way to do is, avg = 2 / 107 → Avg = 0.0187 Values in column W are referred to as "leverage."

"Rule of thumb" is: 2 x avg leverage → 0.0374

Minitab: min{0.99; 3 x avg leverage} → 0.0561 which happens to be > any value in cells W3:W109.

Attachment 8. MDH Risk Assessment Advice for trans-1, 2-Dichloroethylene

DEPARTMENT OF HEALTH

Water Gremlin

HEALTH ASSESSMENT SERIES I TRANS-1,2-DICHLOROETHYLENE IN AIR AND HEALTH

At a Glance

- A general overview of the published toxicity studies indicates that t-DCE displays relatively low toxicity. However, information regarding possible health effects from breathing t-DCE over long periods is lacking and no studies have been conducted to assess possible cancer risk.
- In January 2019, MDH developed chronic Risk Assessment Advice (RAA) specifically for t-DCE air permitting applications at the Water Gremlin facility. The RAA, which is defined as an amount that is safe to breathe daily for a lifetime, was 70 µg/m3 (micrograms per cubic meter).
- The Minnesota Pollution Control Agency (MPCA) used air modeling to determine that Water Gremlin could emit 92 tons of t-DCE per year without exceeding an annual average concentration of 70 µg/m3 in air outside of the Water Gremlin property boundary.
- Water Gremlin used t-DCE during March 2019-August 2019, then again from January 2020 to the present. Sixty tons of t-DCE was used from March 2019 to March 2020.
- Air monitoring around the Water Gremlin facility began on March 1, 2019, and is on-going. Monitoring results are highly variable, reflecting variations in weather (mainly wind speed and direction) and the rate of t-DCE use at the facility.
- In April 2020, MDH revised the t-DCE chronic RAA to 20 µg/m3, and developed a subchronic RAA value of 200 µg/m3 for exposures greater than 30 days up to 8 years.
- MDH does not expect health effects to occur in the community from Water Gremlin's past or current emissions of t-DCE.

Purpose

This document describes

- how MDH uses t-DCE toxicology studies and risk assessment to develop air guidance values,
- how MDH Risk Assessment Advice developed in January 2019 was used to set limits for Water Gremlin t-DCE emissions,
- the results of the t-DCE air monitoring data from monitors on Water Gremlin's property,
- the new MDH Risk Assessment Advice for t-DCE developed in April 2020, and
- Water Gremlin's t-DCE emissions and MDH conclusions about health risk.

What is *trans*-1,2-Dichloroethylene (t-DCE)?

t-DCE is a clear liquid that is highly flammable and evaporates easily (part of a chemical class called volatile organic compounds or VOCs). It is used as a solvent for cleaning and degreasing, as well as a propellant and blowing agent (U.S. EPA, 2019). It has recently been used as an alternative to trichloroethylene (TCE). Exposure occurs mainly by breathing it in at workplaces where t-DCE is made or used.

After Water Gremlin was forced to stop TCE use in January 2019, they expressed interest in resuming coating operations with a product called FluoSolv WS (NuGenTec, 2019). FluoSolv is composed primarily of t-DCE, and its use in coating would result in air emissions of t-DCE.

What Happens to t-DCE in the Air?

When t-DCE gas is continuously released into the air there can be localized elevated air concentrations. Farther away from the source t-DCE mixes into the atmosphere by spreading out in all directions and becomes increasingly diluted. t-DCE is also broken down in the atmosphere. It takes about five days for an amount of t-DCE in air to reduce by half by breaking down (U.S. EPA, 2010). t-DCE is not expected to settle on soil or surface water, and any that does would evaporate back into the air quickly.

What Happens to t-DCE in the Body?

t-DCE is a volatile, fat-soluble compound that is quickly taken up through the lungs and gastrointestinal tract (ATSDR 1996). While t-DCE is fat-soluble, there is no solid data indicating accumulation in the liver, brain, kidney, or other fat tissue following exposure. t-DCE can be metabolized in the liver, as shown by rodent studies. It is likely broken down into more water-soluble metabolites which are quickly removed by the kidneys (ATSDR 1996; U.S. EPA 2010). Some studies show the body can eliminate t-DCE by exhaling it (U.S. EPA 2010).

MDH Risk Assessment Advice – January 2019

In January 2019, MPCA requested that MDH develop a site-specific air guidance value that could be used to determine a safe amount of t-DCE that Water Gremlin could release into the air.

MDH derived a *chronic* inhalation value of 70 µg/m^3 (micrograms per cubic meter) as Risk Assessment Advice (RAA), or an amount that is safe to breathe daily for a lifetime. The RAA was developed to be protective against immune system effects that were shown in a study of mice exposed to t-DCE in drinking water. Exposures to t-DCE in amounts greater than 70 µg/m^3 does not mean health effects are likely, especially if they only occur episodically and for less-than-lifetime durations. However, the risk of health effects generally increases as the amount and duration of chemical exposures increase.

MDH's RAA was unable to take into account the minor constituents of FluoSolv WS, hydrofluoroethers, because toxicological data are unavailable. Hydrofluoroethers are very persistent chemicals that are added to make the FluoSolv mixture non-flammable.

A description of how air guidance values are developed using toxicology studies and risk assessment is below.

Toxicology Studies and Risk Assessment

Risk assessment is a science-based tool used to evaluate the potential effects of a chemical on human health. Risk assessment uses the best available scientific information, as well as professional judgment and policy, to estimate risks in a standardized way to help make informed decisions about managing or reducing risks.

To determine a safe level of exposure to contaminants, scientists frequently rely on animal studies. In these studies, animals in a laboratory (often rodents) are exposed to large amounts of a chemical of

interest at different doses and durations; acute (hours), subchronic (often 90 days), and chronic (often 1-2 years). Because it is unclear how well short-term, high exposure tests on animals predict how people may respond to low level exposures over a longer period of time, scientists err on the side of caution when determining safe exposure amounts for people. This is generally done by dividing the amounts shown to cause an effect in study animals by uncertainty factors of 10 to 3,000 to arrive at an amount expected to be safe for all members of the population. Greater reductions are used when there is less certainty in the scientific data available. Using such margins of safety increases confidence that health effects would be extremely unlikely at the calculated safe amount, even among sensitive individuals such as children and pregnant women.

The U.S. Environmental Protection Agency (EPA) completed a review of t-DCE in 2010 (U.S. EPA, 2010). EPA states that a general overview of the toxicity studies conducted indicates t-DCE displays low toxicity. However, there is a lack of information regarding the possible health effects from breathing t-DCE over long periods. EPA concluded that there was insufficient inhalation data to support deriving a safe air value for long-term (chronic) exposures. EPA also states that there is "inadequate information to assess the carcinogenic potential" of t-DCE based on the absence of human or animal cancer studies.

Although there are no chronic studies of t-DCE, there are several subchronic animal studies (U.S. EPA, 2010). Five studies exposed rodents to t-DCE by drinking water or food, and two studies exposed rodents by inhalation (one unpublished). Changes in liver and kidney weight were the main effects observed (EPA, 2010).

The results of the two inhalation studies were inconsistent. A limitation to both was that exposures occurred intermittently (six and eight hours/day) rather than continuously. With intermittent dosing, exposure concentrations should be adjusted to reflect a continuous exposure to use for calculating health risk values. The earliest study (Fruendt et al., 1977) showed an effect of fat accumulation in the liver and liver cells in rodents exposed to t-DCE at 794,000 µg/m^3 [equivalent to 200 parts per million (ppm)]. The Agency for Toxic Substances and Disease Registry (ATSDR) used this study's results to develop *acute* and *subchronic* air values of 790 µg/m^3 (dividing the effect level by an uncertainty factor of 1,000) based on fat accumulation in liver cells (ATSDR, 1996).

In 2006, EPA used the same study results to derive a "provisional" *chronic* air value of 60 µg/m^{3}by adjusting the 794,000 µg/m^{3}dose to a continuous exposure and dividing by an uncertainty factor of 3,000 (U.S. EPA, 2014). EPA did not derive a *subchronic* value at that time. However, when EPA did a more thorough toxicological review of t-DCE in 2010, they declined to calculate an air value based on this study's data because of its limitations and a lack of corroboration with other studies (U.S. EPA, 2014). A later unpublished subchronic rodent inhalation study (DuPont, 1998) did not show any effects even at doses of 15,800,000 µg/m^3.

In their 2010 toxicological review, EPA determined there was enough information to derive a safe amount for oral exposure to t-DCE. A subchronic drinking water study showing rodent immune suppression (Shopp et al., 1985) was used to derive a safe amount of t-DCE that could be consumed by people over a lifetime (0.02 milligram/kilogram-day). EPA applied an uncertainty factor of 3,000 to account for differences between animals and humans, variability among humans, use of a subchronic study, and a lack of additional studies. In January, 2019, MDH used this oral dose to derive a *chronic* air guidance value, by converting the oral exposure to an air exposure to arrive at the 70 µg/m^3 site-specific RAA for t-DCE use at Water Gremlin.

MPCA Air Modeling

Air quality dispersion modeling uses computer simulation to predict pollutant concentrations at different locations and distances from a source. MPCA uses the AERMOD dispersion model, developed and recommended by the U.S. EPA, to estimate the levels of air pollutants emitted from sources. MPCA conducted air modeling of proposed Water Gremlin t-DCE emissions to back-calculate an annual emission rate that would not result in long-term exceedances of the t-DCE inhalation RAA that MDH developed in January 2019. According to the MPCA's modeling, 92 tons of t-DCE could be emitted in a year without exceeding an annual average concentration of 70 µg/m^3 in air outside of the property.

Restart of Coating Operations – March 2019

Water Gremlin resumed coating operations using t-DCE in place of TCE, on March 1, 2019, after MPCA and Water Gremlin signed a settlement agreement to resolve the company's air quality violations. The agreement limited Water Gremlin's total VOC emissions to 90 tons per year, as a 12 month rolling sum, using a mass balance calculation that assumes all of the t-DCE used in operations is emitted to air, except any that is accounted for as leaving the facility as liquid waste. Based on the air modeling described above, this 90-ton-per-year limit prevents the annual average t-DCE levels from exceeding the RAA of 70 µg/m^3 in locations where people live.

On August 22, 2019, MPCA ordered Water Gremlin to suspend the operation of the coating lines because t-DCE was found in the soil vapor beneath the building. See Water Gremlin Health Assessment Series: Soil Vapor and Health (https://www.health.state.mn.us/communities/environment/hazardous/docs/sites/ramsey/wgsoilvapor.pdf) for more information. Because of this suspension, t-DCE use lasted for slightly under six months in 2019. The coating lines remained shut down until January 21, 2020. Use of the coating lines was phased in slowly, and some lines transitioned to a water-based coating. As a result, less t-DCE was used in 2020 each month (through March) compared to monthly active coating operations in 2019. The one year period of t-DCE use (from March 2019- March 2020) totaled 60 tons. The 12 month rolling sum is currently decreasing due to the reduced use of t-DCE. For additional information and a chart of the t-DCE emissions as a rolling sum, see the MPCA Water Gremlin air monitoring webpage (https://www.pca.state.mn.us/air/water-gremlin-air-monitoring).

Air Monitoring for t-DCE – Data from March 2019 to March 2020

The 2019 settlement agreement required Water Gremlin to conduct ambient air monitoring. Five air monitors were placed on the Water Gremlin property near the property boundaries. Beginning on March 1, 2019, 24-hour samples were collected every three days, and analyzed for a standard list of VOCs. Monitoring results are highly variable; reflecting variation in weather (mainly wind speed and direction) and the rate of t-DCE use at the facility.

During the period from March 1 to August 22, 2019 when FluoSolv was used, t-DCE results ranged from not detected (shown by a < symbol and a number which is the lowest level detectable) to 648 µg/m^3 as summarized in the table below.

t-DCE Air Monitoring Results on Water Gremlin Property from 3/1/19 to 8/22/19 (µg/m^3)

Monitor location	Minimum	Maximum	Median*	Average
East	<1.1	205	11	29
North	<1	208	5	33
Northwest	<1.1	149	5	21
South	<1.1	104	4	15
West	<1.1	648	21	86

* A median is the middle value of the results (approximately half the results are less than and half the results are greater than the median). When the monitors did not detect any t-DCE, MDH used the detection limit (rather than zero) when calculating the median and average results.

Air monitoring at the five monitors on the Water Gremlin property continued during the time the coating lines were shut down. Out of a total of 237 individual samples analyzed from 48 sampling days during the shutdown period, low levels of t-DCE were detected in only 16 samples, ranging from 1.2 to 5.6 µg/m^3.

Use of t-DCE resumed on January 21, 2020, at lower quantities than in 2019. At the end of April 2020, monitoring results reflected this decline in use of t-DCE in 2020 for coating (see below; ranging from not detected to 97 µg/m^3).

t-DCE Air Monitoring Results on the Water Gremlin Property from 1/21/20 to 4/30/20 (µg/m^3)

Monitor location	Minimum	Maximum	Median	Average
East	<1	52	1.7	7.1
North	<1	60	1.2	6.6
Northwest	<1	47	1.2	4.6
South	<1.1	51	3.3	8.3
West	<1	97	1.2	10

MPCA installed additional VOC monitors at Birch Lake Elementary School (north of Water Gremlin) and Columbia Park (northwest of Water Gremlin) to provide air monitoring results in the community. Only two 24-hour samples (see below) were collected at these monitors before the t-DCE coating shut down on August 22, 2019. MPCA reported that a majority of the subsequent sampling results at these locations have not detected t-DCE. This additional data will be provided on the MPCA website this summer.

5

t-DCE Air Monitoring Results at Birch Lake Elementary and Columbia Park (µg/m^3)

Monitor location	8/13/19	8/19/19
Birch Lake Elementary	0.79	16 (estimated)
Columbia Park	1.3	3.9

More information about air monitoring at and near the Water Gremlin facility and all of the results can be found on the MPCA Water Gremlin air monitoring webpage (https://www.pca.state.mn.us/air/water-gremlin-air-monitoring)

MDH Risk Assessment Advice – April 2020

In 2020, MDH conducted a re-evaluation of t-DCE toxicity studies that could be used to develop an air guidance value. No new studies were identified. However, an improvement in the modeling of the data in the study used to derive the 2019 RAA was discovered (California EPA, 2018). MDH, in consultation with the U.S. EPA, decided to use the improved study model data. Using these data, MDH updated its *chronic* inhalation RAA for t-DCE to 20 µg/m^3. MDH also developed a *subchronic* inhalation value for t-DCE of 200 µg/m^3. A *subchronic* duration is defined as a repeated exposure for greater than 30 days and up to 10% of an average human lifespan (eight years).

MDH Risk Assessment Advice (RAA) for *trans*-1,2-Dichloroethylene

Duration	2019 RAA (µg/m^3)	2020 RAA (µg/m^3)	Health Endpoint
Acute (up to 24 hours)	ND	ND	
Short-term (> 24 hours to 30 days)	ND	ND	
Subchronic (> 30 days to 10% of a lifetime)	ND	**200**	Immune System
Chronic (> 10% of a lifetime to a lifetime)	70	**20**	Immune System
Cancer (lifetime)	ND	ND	

ND = Not derived

The 2020 RAA values are based on the amount of t-DCE (approximately 50,000 µg/m^3) where an immune system effect was observed in a subchronic animal study. Therefore, it is expected that a small risk of immune system effects may exist for people exposed to t-DCE repeatedly at 50,000 µg/m^3. The RAA is much lower than this to reflect uncertainties in the data and the desire to develop a safe exposure level for the population, including vulnerable subgroups.

Other t-DCE Air Values

Occupational Values

While occupational limits can provide context for ambient air concentrations, MDH believes that these values are sometimes not protective of worker health over the long-term, and certainly are not adequate to protect the general population. The Occupational Safety and Health Administration (OSHA), the National Institute for Occupational Safety and Health (NIOSH), and the American Conference of Governmental Industrial Hygienists all have adopted occupational criteria for 1,2-DCE (note this is a mixture of t-DCE and *cis*-1,2-DCE) over a work day of 200 parts per million in air-- equivalent to 790,000 µg/m^3. NIOSH lists symptoms of occupational exposure as irritation of the eyes and respiratory system, as well as a central nervous system depression. These values are intended to allow workers to be able to do their work safely and may not be protective for long-term exposure.

Other State Values

While there is wide agreement that toxicity data needed to derive a chronic air value for t-DCE is lacking, it is arguably helpful to have some value that limits air emissions, or provides some assessment of health risk, rather than no value at all. Some states use or have developed chronic t-DCE air values (ranging from 60–80 µg/m^3) based on the ATSDR and EPA values discussed above for use in soil and groundwater cleanup programs. The Michigan Department of Environmental Quality's Air Quality Division took a slightly different approach and developed a chronic t-DCE air value of 200 µg/m^3 (MDEQ, 2016) for air quality permitting purposes based on the same study MDH used for the RAA. States often use different uncertainty factors or other parameters in their risk assessment calculations resulting in a range of values that reflect differences in policies, changes in application over time, and even varying scientific opinions. MDH's professional judgment about developing an inhalation values for t-DCE appears to generally be in line with decisions other states have made to address this chemical, although the 2020 chronic RAA may now be the most protective value in the country.

Water Gremlin t-DCE Emissions in Air and Health

The outdoor air surrounding Water Gremlin is affected by use of t-DCE at the facility. Air concentrations from the five monitors on the Water Gremlin property are highly variable, based largely on weather and facility use. The t-DCE from Water Gremlin is expected to spread out in air surrounding the facility similar to past TCE emissions, although current use of t-DCE is significantly lower than past use of TCE.

In 2020, MDH developed safe inhalation values for t-DCE for two different exposure durations – *chronic*, for up to a lifetime of exposure, and *subchronic*, defined as repeated exposure for greater than 30 days, up to 10% of an average lifetime (8 years). The subchronic value was developed in response to community member's requests to help understand shorter duration health risks.

While recent exposure to t-DCE from Water Gremlin is a subchronic duration, the more appropriate objective of controlling ongoing facility emissions is to remain at or below the chronic air guidance of 20 µg/m^3. This is particularly true in a community where past emissions of TCE were excessive.

MDH does not expect health effects in the community from Water Gremlin's past or current emissions of t-DCE. Given the available air monitoring data on the Water Gremlin property, and what can be estimated from modeling, there were times when air concentrations were over the current chronic RAA value (20 µg/m^3) beyond Water Gremlin's property boundary, and very limited times when air

7

concentrations were over the subchronic RAA value (200 µg/m^3) for a short duration. However, neither the chronic nor subchronic RAA were exceeded for a length of time that poses a health concern. The air monitoring results on the Water Gremlin property are also higher than actual exposures to t-DCE (how much t-DCE enters the body through breathing) experienced by people in the community.

Are Some People at Greater Risk?

As a general rule, MDH considers women who are pregnant or may become pregnant, infants and children, the elderly, and people living with chronic disease or a compromised immune system to be more sensitive to exposure to chemicals. MDH's air guidance values are developed to be protective of people who may be more susceptible.

There is no information available regarding t-DCE exposure and effects to a developing human fetus or small children. Based on the results of only one animal study, t-DCE is not currently expected to cause developmental effects in people, but the information is too limited to draw this conclusion (U.S. EPA, 2010).

References

ATSDR (1996). Toxicological Profile for 1,2-dichloroethene. U. S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry. Accessed on April 14, 2020 at: Toxicological Profile for 1,2-dichloroethene (https://www.atsdr.cdc.gov/toxprofiles/tp87.pdf).

California EPA (2018). Public Health Goals Cis- and Trans-1,2-Dichloroethylene in Drinking Water. Pesticide and Environmental Toxicology Breath, Office of Environmental Health Hazard Assessment, California Environmental Protection Agency. July 2018. Accessed on April 14, 2020 at: Public Health Goals Cis- and Trans-1,2-Dichloroethylene in Drinking Water (https://oehha.ca.gov/media/downloads/water/chemicals/phg/phg12-dce072018.pdf).

DuPont (1998). Trans-1,2-Dichloroethylene: 90-day inhalation toxicity study in rats, dated December 1, 1998. E.I. duPont de Nemours and Company, Haskell Laboratory for Toxicology and Industrial Medicine. Laboratory Project ID: HL-1998-00952.

Freundt KJ, Liebaldt GP, Lieberwirth E (1977). Toxicity Studies on Trans-1,2-Dichloroethylene. Toxicology 7:141-153.

MDEQ (2016). Initial Threshold Screening Level Memo. Michigan Department of Environmental Quality Interoffice Communication. January 20, 2016. Accessed on December 5, 2019, at: Initial Threshold Screening Level Memo (http://www.deq.state.mi.us/aps/downloads/ATSL/156-60-5/156-60-5_annual_ITSL.pdf).

NuGenTec (2019). NuGenTec (https://www.nugentec.com/fluosolv-ws-cold-cleaning-carrier-fluid)

Shopp GM, Sanders VM, White KL, Munson AE (1985). Humoral and Cell-Mediated Immune Status of Mice Exposed to trans-1,2-Dichloroethylene. Drug Chem. Tox., 8(5):393-407.

U.S. EPA (2010). Toxicological Review of cis-1,2-dichloroethylene and trans-1,2-dichloroethylene. In Support of Summary Information on the Integrated Risk Information System (IRIS). September 2010. Accessed on April 15, 2020, at: Toxicological Review of cis-1,2-dichloroethylene and trans-1,2-dichloroethylene (https://cfpub.epa.gov/ncea/iris/iris_documents/documents/toxreviews/0418tr.pdf).

U.S. EPA (2014). Removal of the *trans*-1,2-Dichloroethylene (CASRN 156-60-5) Provisional Peer-Reviewed Toxicity Value (PPRTV) assessment from the Electronic Library. Memorandum from Scott

Wesselkamper, Director, Superfund Health Risk Technical Support Center (STSC) EPA/ORD/NCEA. June 17, 2014. Accessed on November 4, 2019, at: Removal of the trans-1,2-Dichloroethylene (CASRN 156-60-5) Provisional Peer-Reviewed Toxicity Value (PPRTV) assessment (https://semspub.epa.gov/work/03/2218741.pdf).

U.S. EPA (2019). Proposed Designation of *trans*-1,2-Dichloroethylene (CASRN 156-60-5) as a High Priority Substance for Risk Evaluation. August 22, 2019. Accessed on October 4, 2019, at: Proposed Designation of trans-1,2-Dichloroethylene (CASRN 156-60-5) as a High Priority Substance for Risk Evaluation (https://www.epa.gov/sites/production/files/2019-08/documents/trans-12-dichloroethylene_156-60-5_high-priority_proposeddesignation_082319.pdf).

Minnesota Department of Health
Site Assessment and Consultation Unit
625 Robert St. N.
PO Box 64975
St. Paul, MN 55164-0975
651-201-4897
health.hazard@state.mn.us
www.health.state.mn.us

05/13/2020

To obtain this information in a different format, call: 651-201-4897.

Attachment 9. MDH trans-1,2-dichloroethylene 2020 Risk Assessment Advice Follow-up

DEPARTMENT OF HEALTH

memo

DATE: July 13, 2022

TO: Kari Palmer, Manager, Air Assessment Section, Minnesota Pollution Control Agency

FROM: James Kelly, Manager, Environmental Assessment and Surveillance Section

SUBJECT: trans-1,2-dichloroethylene (CAS No. 156-60-5) 2020 Risk Assessment Advice Follow-up

Commented [A77]: See petition for contested case hearing and comment letter on MDH risk assessment.

This memorandum is in response to your email of April 26, 2022 regarding the Minnesota Department of Health (MDH) risk assessment advice (RAA) for trans-1,2-dicholoroethylene (tDCE). In January 2019, at the request of the Minnesota Pollution Control Agency (MPCA), MDH developed risk assessment advice (RAA) for trans-1,2-dicholoroethylene (tDCE). This request was made after the Water Gremlin facility switched from trichloroethylene (TCE) to tDCE following many years of emitting significantly more TCE than allowed by their air permit, at times over 100 tons per year. Some nearby residents of White Bear Township were exposed to airborne concentrations of TCE above the MDH health-based value (HBV) of 2 ug/m^3 possibly as early as 1992.

The mission of MDH is to protect, maintain, and improve the health of all Minnesotans. With this mission in mind, MDH initially derived RAA for air using route-to-route (RTR) extrapolation from the 2010 U.S. Environmental Protection Agency's Integrated Risk Information System's (EPA IRIS) reference dose (RfD). The EPA IRIS RfD was developed from the subchronic oral (drinking water) mouse study by Shopp et al. 1985. In Shopp et al. 1985, tDCE exposed mice were evaluated for humoral immune status as measured by the ability of spleen cells from these mice to produce splenic immunoglobulin M (IgM) antibody forming cells (AFCs) against sheep red blood cells (sRBC), hemagglutination titers to sRBC, and by spleen cell response to spleen lymphocyte responsiveness (LPS). Decreased number of AFCs against sRBCs in male mice was selected as the critical health effect.

In 2020, MDH's Health Risk Assessment (HRA) Unit reevaluated the tDCE RfD (based on Shopp et al. 1985) because of improvements to Benchmark Dose Software (BMDS) modeling (as described in MDH 2020a, 2020b). This updated MDH RfD was then used to update the air RAA for tDCE (MDH 2020a). If MDH had not developed tDCE RAA, Water Gremlin's emissions would have been released into the surrounding community without a tDCE-protective ambient air limit. This does not align with MDH's mission to protect the health of all Minnesotans, particularly the White Bear Township residents who have already been exposed to prolonged, elevated concentrations of TCE above the MDH air HBV.

Currently, inhalation toxicity information for tDCE is limited. The EPA IRIS 2010 Toxicological Review of cis- and trans-1,2-dichloroethylene concluded there was insufficient inhalation data to support deriving a safe air value for tDCE exposure (EPA IRIS 2010). The EPA IRIS 2010 toxicological review of tDCE

describes two inhalation studies that were evaluated for a potential reference concentration (RfC) by EPA IRIS and MDH, Freundt et al. 1977 and DuPont 1998 (abstract published by Kelly). The Freundt study was the principal study for the 2006 Provisional Peer-Reviewed Toxicity Value (PPRTV) tDCE chronic p-RfC assessment by the EPA. Per a June 17, 2014, EPA memorandum "Removal of the trans-1,2-Dichloroethylene (CASRN 156-60-5) PPRTV assessment from the Electronic Library" (attachment 1), the 2006 PPRTV p-RfC was removed from the PPRTV database based on the conclusions of EPA IRIS 2010 that the study was insufficient for deriving an RfC. EPA IRIS 2010 (reiterated in EPA's 2014 memo) also found DuPont 1998 to be insufficient for deriving an RfC.

EPA IRIS 2010 summary regarding DuPont 1998:

> *The RfC for trans-1,2-DCE was reevaluated in light of the submission of an unpublished report by DuPont (1998) (previously described in the Kelly (1999) abstract) during the public comment period. The DuPont (1998) study was reviewed and considered as a potential principal study for RfC derivation. A summary and evaluation of the study findings were added to Sections 4.2.2.2, 4.6.2.2, and 5.2.2. Relative liver and kidney weight changes in the DuPont (1998) study, while likely treatment related, were relatively small, not generally statistically significant and, therefore, were not considered to be an appropriate basis for the derivation of an RfC. Some statistically significant hematology findings were reported in the DuPont (1998) study (see a summary and discussion of these findings in Sections 4.6.2.2 and 5.2.2). The toxicological significance of these effects is not clear. No effects on spleen or thymus weight were found at 90 days, and no histopathological changes in these organs were reported. DuPont suggested that decreases in WBC count and lymphocytes were secondary to "stress" and elevated endogenous glucocorticoids. While the study authors did not provide support for this hypothesis, the phenomenon of irritation/stress leading to decreased WBC or lymphocyte counts has been observed following other chemical exposures (see discussion in Section 5.2.2). Further, a similar reduction in WBC and lymphocyte counts was not observed in the 90-day NTP (2002a) dietary study of trans-1,2-DCE. For these reasons, identification of hematological changes as a potential critical effect was not considered scientifically supported. Therefore, while changes in some endpoints in the DuPont (1998) study were attributed to trans-1,2-DCE exposure, none of the effects were identified as potential critical effects because of the magnitude of the effect or questions about the biological significance of the effect.*

The DuPont 1998 study finding are summarized by EPA IRIS 2010 as:

> *Clinical chemistry changes observed in the DuPont (1998) study were generally not dose dependent, were transient (i.e., observed at 45 but not 90 days) or of small magnitude, and were not considered by the investigators to be toxicologically important. No statistically significant or toxicologically important analytical urine changes occurred during this study. Hematological analysis of blood samples collected on days 45 and 90 revealed a few statistically significant hematological findings in male and female rats. Mean hemoglobin concentration and hematocrit were statistically significantly decreased in the 1,000- and 4,000-ppm males at the 45-day sampling time and mean monocyte*

count was statistically significantly decreased in the 4,000-ppm females at the 45-day sampling time; these changes were not considered to be toxicologically important because the changes were small in the context of historical controls and a similar change did not occur at the 90-day sampling time. Generally, dose-related decreases in white blood cell (WBC) and lymphocyte counts were observed at both 45 and 90 days in male and female rats.

At the high dose, WBC count decreased about 20% in male rats and 18% in female rats compared to the control; lymphocyte levels decreased about 25% in males and about 22% in females.

In general, organ weights in exposed rats showed no statistically or biologically significant changes (<10%) relative to the control (DuPont, 1998). Relative adrenal weight (as percent of body weight) was statistically significantly reduced in male rats at 1 month recovery at the mid concentration (1,000 ppm or 3,960 mg/m3) but not at the high concentration (4,000 ppm or 15,800 mg/m3) of trans-1,2-DCE. In male rats at zero day recovery, increases in relative liver weight (as percent of body weight) ranged from 4 to 8% and were not dose related. Similarly, increases in relative liver weight (as organ to brain weight ratio) in male rats were 4, 4, and 6% at concentrations of 200, 1,000, and 4,000 ppm (or 792, 3,960, and 15,800 mg/m3), respectively. In female rats at zero day recovery, increases in relative liver weight (as percent of body weight) were 1, 5, and 6% at concentrations of 200, 1,000, and 4,000 ppm (or 792, 3,960, and 15,800 mg/m3), respectively. Increases in relative liver weight (as organ to brain weight ratio) in female rats at zero day recovery were 2, 8, and 8% at concentrations of 200, 1,000, and 4,000 ppm (or 792, 3,960, and 15,800 mg/m3), respectively. Increases in relative kidney weight for male and female rats (both as percent of body weight and as organ to brain ratio) were <10% and were not generally dose-related. For male rats, relative kidney weights ranged from 0 to 6% and from 3 to 5% as percent of body weight and as organ to brain weight ratio, respectively. Relative kidney weight for female rats ranged from 2 to 5% as percent of body weight and from 5 to 8% as organ to brain weight ratio. No histopathological changes were related to exposure to trans-1,2-DCE.

The DuPont 1998 authors themselves did not consider the decreased white blood cell (WBC) and lymphocyte levels in male rats at only the highest exposure dose (15,800 mg/m^3) to be toxicologically relevant as the decrease was small in the context of historical controls and may be the result of endogenous glucocorticoid (a class of steroid hormones released in response to stress in vertebrates; important for immune system functioning) release. Glucocorticoid release in stressed rodents from other chemical and nonchemical stressors and subsequent decreases in leucocytes and lymphocytes or redistribution have been reported in other studies (Shimizu et al. 2000, Dhabhar et al. 1995, Brondeau et al. 1990; Jensen 1969). However, DuPont 1998 did not report any data to attest to this plausible yet potential stress effect.

While EPA IRIS 2010 found the DuPont study insufficient for an RfC, it did acknowledge their findings may provide some support for the published, peer-reviewed critical oral study by Shopp et al. 1985 immune system endpoints:

> *The possibility exists that the decreased WBC and lymphocyte counts in rats in the DuPont (1998) inhalation study represent an effect on the immune system. Oral toxicity findings for the trans-isomer provide limited support for this possibility. Shopp et al. (1985) reported suppression in humoral immune status (i.e., decrease in AFC in response to sRBC challenge) in male mice exposed to trans-1,2-DCE by ingestion, but cell-mediated immune status in these mice was unaffected. Statistically significant changes in WBC and lymphocyte counts were not identified by NTP (2002a) in their 90-day oral (feed) study. It is noteworthy that no histopathological changes of the spleen and thymus were seen in rats at any exposure concentration in the DuPont (1998) study—findings that would be consistent with a direct effect of trans-1,2-DCE on the immune system. The considerable variability in WBC and lymphocyte counts across studies and with the age of the rat within a study was also taken into consideration in evaluating the toxicological significance of these hematologic endpoints. For example, mean lymphocyte counts in control male and female rats ranged from 4,250-6,160/µL (males) and 3,390-7,400/µL (females) in seven recent NTP 90-day inhalation toxicity studies in rats.[1] Lymphocyte counts in controls in the DuPont (1998) study similarly showed considerable variability; control lymphocyte counts (mean ± SD) (in /µL) were 12,901 ± 1,961 (male rat) and 10,239 ± 4,147 (female rat).*

As already noted, PPRTV chose to remove a 2006 p-RfC citing EPA IRIS's 2010 outline of deficiencies for the Freundt 1977 as stated in the EPA 2014 memo. Then in 2020, EPA's Office of Research and Development Center for Public Health and Environmental Assessment opted in its PPRTV assessment to resurrect DuPont's designated 'insufficient and not scientifically supported critical effects' study by EPA IRIS 2010 to derive a screening level p-RfC for use at Superfund sites. The 2014 EPA memo states:

> *In summary, the available inhalation data from DuPont (1998) and Freundt et al. (1977) were considered insufficient to support reference value derivation and, therefore, an RfC for trans-1,2-DCE was not derived. Current practice by the PPRTV Program states that once an IRIS assessment becomes available for any given chemical, the PPRTV assessment for that chemical is removed from the PPRTV electronic library. Thus, based on this practice and the rationale outlined above, it is recommended that the conclusions presented in the IRIS assessment for trans-1,2-DCE be presently adhered to, and the trans- 1,2-DCE PPRTV assessment has been removed from the electronic library.*

It is unclear if PPRTV will retain this screening level p-RfC for an extended period or will again remove it as it does not align with the conclusions of the EPA IRIS 2010 review regarding use of the DuPont 1998 study or Freundt et al. 1977.

Per standard MDH practice, when new chemical information or studies are released, they are reviewed for critical or new key information. This type of documentation allows MDH to decide if this new information is compelling enough to warrant an update to an existing health protective air (or water) guidance value.

[1]Control lymphocyte data at 13- or 14-weeks on study were taken from NTP 90-day inhalation toxicity studies in the rat for vanadium pentoxide (NTP, 2002b), propylene glycol mono-t-butyl ether (NTP, 2004a), stoddard solvent IIC (NTP, 2004b), decalin (NTP, 2005), divinylbenzene-HP (NTP, 2006), α-methylstyrene (NTP, 2007), and cumene (NTP, 2009).

In fall of 2020, PPRTV provided a screening level p-RfC for screening Superfund sites. A PPRTV screening level value is derived when it is inappropriate to derive a provisional RfC. Available data do not meet all requirements for deriving a provisional toxicity value and are associated with more uncertainty than a provisional RfC.

MDH reviewed the 2020 PPRTV tDCE report when it was publicly released. The PPRTV report did not present new studies, did not provide improvements to reported data, and relied on an unpublished study (no peer-review process) deemed insufficient because of toxicologically questionable endpoints by EPA IRIS 2010. MDH considered the Shopp et al. 1985 drinking water study to be superior for tDCE as it reports on a specific challenge and response to the rodent immune system and not just a standard blood count panel as in Dupont 1998. Also, the drinking water pathway represents a more continuous internal exposure to the rodent rather than a six-hour episodic exposure occurring five days per week where recovery over 18-hour periods and weekends is likely. MDH was not compelled by the PPRTV report to change the current health protective 2020 RAA (which is two-fold lower than the PPRTV for the chronic value, 20 ug/m^3 versus 40 ug/m^3). As already outlined above, the hematological endpoints reported by DuPont 1998 were not scientifically supported and was designated as insufficient to derive an RfC by EPA IRIS in 2010 and again by EPA in the 2014 memo specifically regarding PPRTV's development of a tDCE provisional RfC. DuPont 1998 has reported immune system endpoints (questionable and small decreases to WBC and lymphocyte) which does somewhat support the established immune-related endpoints (decreased humoral immune response) from the EPA IRIS 2010 RfD critical study, Shopp et al. 1985.

MDH acknowledges the limitations associated with RTR extrapolation. In the absence of sufficient/acceptable inhalation data and with the utmost priority being the protection of public health (particularly considering the White Bear community had already experienced prolonged, elevated exposures to TCE from Water Gremlin) the decision was made to utilize RTR extrapolation from the published, peer-reviewed EPA IRIS 2010 and MDH critical study, Shopp et al. 1985 – immune system endpoints.

Relevant studies investigating liver and pulmonary endpoints did not indicate obvious portal of entry or hepatic first-pass effect concerns. Four subchronic oral rodent studies (NTP 2002, Barnes et al. 1985, Hayes et al. 1987 and key study Shopp et al. 1995) were evaluated and described in EPA IRIS 2010 to determine the IRIS RfD (see Table 1). Among NTP 2002, Barnes et al. 1985, and Hayes et al. 1987 key effects associated with oral (drinking water or dietary) tDCE exposure that were identified include decreased body weight gain, effects on organ weights (liver, kidney, thymus, and lung), minimal changes in liver function enzymes, decreased mean body weight, and minimal decreases in hematological parameters. While liver weight was increased in some oral studies it was not found to be hepatotoxic.

Freundt et al. (1977) observed increased incidences of lung and liver lesions (pulmonary capillary hyperemia and distension of the alveolar septum and fatty accumulation in liver lobules and Kupffer cells) at 793 mg/m^3 in rats exposed for up to 16 weeks. The lung lesions were similarly observed after intraperitoneal injection and oral exposures, suggesting that the effects may be systemic. However, the Freundt et al. study has limitations. No evidence of liver or respiratory toxicity was observed in rats from the 90-day subchronic DuPont 1998 study despite it being an inhalation exposure scenario and tDCE is well absorbed in the lung (PPRTV 2020). No lung pathology was observed in the 90-day study by DuPont

(1998) at a concentration approximately 20-fold higher than that used by Freundt et al. (1977) (EPA IRIS 2010).

From PPRTV 2020 on DuPont 1998:

> *Gross examinations were done at necropsy; liver, kidneys, lungs, testes, ovaries, adrenal glands, and brain were weighed, and samples from >45 tissues from 10 males and 10 females from the control and high-exposure groups were fixed in formalin or Bouin's solution, embedded in paraffin, stained with H & E, and examined microscopically. For low- and mid-exposure groups, the nose, pharynx/larynx, lungs, liver, kidneys, heart, and reproductive organs were microscopically examined. No histopathology was done on recovery animals owing to the lack of treatment-related lesions in the nonrecovery, high-exposure group.*

Histological changes from immune system organs that would include bone marrow, spleen, and thymus gland are not corroborated by DuPont 1998. Again, changes to WBC counts to the DuPont study rats could be attributed to stressed animals and may only serve to support the findings of Shopp et al, 1985.

Table 1. Summary of Relevant tDCE Oral and Inhalation Study Endpoints (as described in EPA IRIS 2010 table 4-13).

Reference	Dose Pathway	Exposure Duration	Species, n	Dose Range	Observed Effects
NTP, 2002	Diet	14 wk	Rat, 9-10/sex/dose	0 – 3245 mg/kg-d	M: Decreased BW gain (6%) at the high dose was not considered a LOAEL. F: ↑ Rel liver wt (10%). The biological significance of ↓ RBC count in M (≥380 mg/kg-d) and F (≥1,580 mg/kg-d) was unclear and not used to identify the LOAEL.
NTP, 2002	Diet	14 wk	Mouse, 10/sex/dose	0 – 8065 mg/kg-d	M: ↑ Rel liver wt (9%). At 8,065 mg/kg-d, ↓ BW gain (~7%). F: ↑ Rel liver wt (11%). Decreased body weight gain (6%) at 1,830 mg/kg-d was not considered a LOAEL.
Hayes et al. 1987	Drinking water	90 d	Rat, 20/sex/dose	0 – 3114 mg/kg-d	F: ↑ Abs kidney wt (8%).
Barnes et al. 1985	Drinking water	90 d	Mouse, 15-23/sex/dose	0 – 452 mg/kg-d	M: ↑ Rel liver wt (8%). F: ↓ Rel thymus wt (18%). Changes in clinical chemistry parameters were sporadic and not used to identify a LOAEL.
Shopp et al. 1985	Drinking water	90 d	Mouse, 8-12/sex/dose	0 – 452 mg/kg-d	M: ↓ sRBC-responsive cells (26%).
Freundt et al. 1977	Inhalation	8 hr/d, 5 d/wk for 1, 2, 8, and 16 wks	Rat, female 6/conc	0 or 792 mg/m^3 (single exposure dose)	F: Fat accumulation in the liver and Kupffer cells.
DuPont 1998	Inhalation	6 hr/d, 5 d/wk for 90 d	Rat, 15/sex/conc	0, 792, 3,960, or 15,800 mg/m^3	M and F: Decreased lymphocyte count reported (statistically significant in high-concentration M only); biologicalsignificance unclear and not used to identify the LOAEL.

↓ = decrease; ↑ = increase; abs = absolute; BW = body weight; dw = drinking water; F = females; M = males; ND = not determined; NOAEL = no-observed-adverse-effect level; rel = relative; wt = weight

Overall, MDH was not compelled by PPRTV's 2020 *screening level* p-RfC to change the established MDH 2020 RAA. The screening level PPRTV was developed as it was inappropriate to derive a provisional RfC. The screening level p-RfC was simply developed as a value to assist with initial risk assessments at Superfund sites. The original 2006 p-RfC PPRTV was removed as the Freundt et al. 1977 and DuPont 1998 studies were both deemed insufficient for RfC development. The unpublished DuPont 1998 study results are also not scientifically supported by EPA IRIS 2010. MDH chose to proceed with the

established Shopp et al. 1985 study as it reported endpoints from an actual challenge to immune system functions and developed RAA for tDCE in the interest of public health protection. It is worth noting again, White Bear residents had already been exposed to TCE over an extended period at concentrations well over MDH's TCE HBV (2 ug/m^3). TCE also has immune system endpoints (decreased thymus weight and cancer), for chronic air exposure durations (MDH 2018). The health effects of a chronic TCE exposure followed by tDCE exposure are unknown at this time. MDH determined that using an unpublished, insufficient study, reporting scientifically unsupported critical health endpoints (that would effectively double the current chronic MDH RAA) was not in the best interest of public health.

Lastly, health begins where we live, learn, work, and play. We all live in conditions that we cannot individually control but that can affect our health, and multiple environmental exposures can further stress our health. The 2020 MDH RAA and PPRTV screening level p-RfC were released during a time when Minnesota, and the rest of the world, was besieged by COVID-19. The immune system effects (immunotoxic effects) reported as the critical health endpoint established by Shopp et al. 1985, and albeit marginally, supported by DuPont 1998, added to the decision by MDH not to change its 2020 RAA to a less protective value. Scientific peer-reviewed studies regarding immunotoxic chemicals are concluding that industrial chemicals and air pollutants can contribute to an association with COVID-19 disease severity (Bashir et al., 2020; reviewed by Quinete and Hauser-Davis, 2021). Several other studies (as reviewed by Selgrade 2007) have shown that suppression of immune responses in rodents is predictive of suppression of immune responses in humans for various environmental contaminants in air, water, and diet. Recently, certain chemicals that are known to be immunotoxic, for example some endocrine disruptors, plasticizers, metals, perfluorinated alkylate substances (PFAS), and nitrogen dioxide, are linked to increased COVID-19 severity (Ogen 2020; Bornstein et al. 2020; Quinete and Hauser-Davis, 2021). These chemicals and chlorinated volatile organic compounds, like TCE and tDCE, may not have the same mechanisms of action or the same properties of absorption, metabolism, distribution, and excretion in the body, but they are all immunotoxicants, which may deleteriously affect Minnesotans' already stressed immune systems. No studies were found linking COVID-19 severity and TCE or tDCE as yet, but both chemicals have been shown to affect the immune system in animal models.

References and Consulted Resources

Barnes, DW; Sanders, VM; White, KL, Jr; Shopp, GM, Jr; Munson, AE. (1985). Toxicology of trans-1,2-dichloroethylene in the mouse. Drug Chem Toxicol 8: 373-392. http://dx.doi.org/10.3109/01480548509041065

Bashir MF, Ma BJ, Bilal , et al. (2020). Correlation between environmental pollution indicators and COVID-19 pandemic: A brief study in Californian context. Environ Res: 187:109652. https://doi.org/10.1016/j.envres.2020.109652

Bornstein, S. R., Voit-Bak, K., Schmidt, D., Morawietz, H., Bornstein, A. B., Balanzew, W., ... & Straube, R. (2020). Is there a role for environmental and metabolic factors predisposing to severe COVID-19? Horm Metab Res. 52(07): 540-546. DOI:10.1055/a-1182-2016

Brondeau, MT; Bonnet, P; Guenier, JP; Simon, P; de Ceaurriz, J. (1990). Adrenal-dependent leucopenia after short-term exposure to various airborne irritants in rats. J Appl Toxicol 10: 83-86. http://dx.doi.org/10.1002/jat.2550100204

Dhabhar, FS; Miller, AH; McEwen, BS; et al. (1995) Effects of stress on immune cell distribution. Dynamics and hormonal mechanisms. J Immunol 154(10):5511–5527. PMID: 7730652

Dupont (abstract by Kelly, DP). (1998). trans-1,2-Dichloroethylene: 90-day inhalation toxicity study in rats. (Laboratory Project ID HL-1998-00952). Newark, DE: E.I. du Pont de Nemours and Company, Haskell Laboratory for Toxicology and Industrial Medicine. (Unpublished)

Freundt, KJ; Leibaldt, GP; Lieberwirth, E. (1977). Toxicity studies on trans-1,2-dichloroethylene. Toxicology 7: 141-153. http://dx.doi.org/10.1016/0300-483X(77)90059-2

Hayes, JR; Condie Jr., LW; Egle Jr., JL; Borzelleca, JF. (1987). The acute and subchronic toxicity in rats of trans-1,2-dichloroethylene in drinking water. J Am Coll Toxicol 6: 471-478. http://dx.doi.org/10.3109/10915818709075692

Jensen, MM. (1969) Changes in leukocyte counts associated with various stressors. J Reticuloendothelial Soc 6:457–465. PMID: 5388696

Minnesota Department of Health. (2020a). Air Toxicological Summary for: trans-1,2-dichloroethylene. https://www.health.state.mn.us/communities/environment/risk/docs/guidance/air/tdcesumm.pdf

Minnesota Department of Health. (2020b). Toxicological Summary Sheet for: trans-1,2-dichloroethylene. https://www.health.state.mn.us/communities/environment/risk/docs/guidance/gw/trans12dce2020.pd f

Minnesota Department of Health. (2018). Toxicological Summary for: Trichloroethylene (TCE). https://www.health.state.mn.us/communities/environment/risk/docs/guidance/air/tceairsumm.pdf

NTP (National Toxicology Program). (2002). NTP technical report on the toxicity studies of trans-1,2-dichloroethylene (CAS No. 156-60-5) administered in microcapsules in feed to F344/N rats and B6C3F1 mice. (ISSN 1521-4621 NTP TR 55). Research Triangle Park, NC. https://ntp.niehs.nih.gov/publications/reports/tox/000s/tox055/

Ogen Y. Assessing nitrogen dioxide (NO2) levels as a contributing factor to coronavirus (COVID-19) fatality. Sci Total Environ 2020; 726: 138605. https://doi.org/10.1016/j.scitotenv.2020.138605

Quinete, N., Hauser-Davis, R.A. (2021). Drinking water pollutants may affect the immune system: concerns regarding COVID-19 health effects. *Environ Sci Pollut Res* **28,** 1235–1246. https://doi.org/10.1007/s11356-020-11487-4.

Selgrade, MK. Immunotoxicity—The Risk is Real, *Toxicological Sciences*, Volume 100, Issue 2, December 2007, Pages 328–332. https://doi.org/10.1093/toxsci/kfm244

Shimizu, T; Kawamura, T; Miyaji, C; et al. (2000) Resistance of extrathymic T cells to stress and the role of endogenous glucocorticoids in stress associated immuno suppression. Scand J Immunol 51:285–292. DOI: 10.1046/j.1365-3083.2000.00695.x

Shopp, GM; Sanders, VM; White, KL; Munson, AE. (1985). Humoral and cell-mediated immune status of mice exposed to trans-1,2-dichloroethylene. Drug Chem Toxicol 8: 393-407. http://dx.doi.org/10.3109/01480548509041066

U.S. Environmental Protection Agency (EPA IRIS). (2010). Toxicological review of cis-1,2-dichloroethylene and trans-1,2-dichloroethylene (CAS nos. cis: 156-592-2: trans- 156-60-5: mixture: 540-59-0). In support of summary information on the Integrated Risk Information System (IRIS) (pp. 174). (NTIS/10880107). Health and Safety Executive. https://cfpub.epa.gov/ncea/iris/iris_documents/documents/toxreviews/0418tr.pdf

U.S. EPA (PPRTV). (2020). Provisional Peer-Reviewed Toxicity Values for Trans-1,2-Dichloroethylene. U.S. Environmental Protection Agency, Washington, DC, EPA/690/R-20/006F. https://cfpub.epa.gov/ncea/pprtv/recordisplay.cfm?deid=349934

U.S. EPA. Superfund Health Risk Technical Support Center Memorandum dated June 17, 2014 from Scott Wesselkamper. “Removal of the trans-1,2-Dichloroethylene (CASRN 156-60-5) Provisional Peer-Reviewed Toxicity Value (PPRTV) assessment from the Electronic Library”. (Attachment 1)

Wu Q, Coumoul X, Grandjean P, Barouki R, Audouze K. (2020). Endocrine disrupting chemicals and COVID-19 relationships: a computational systems biology approach. Environ Int 157:106232. https://doi.org/10.1016/j.envint.2020.106232

Minnesota Department of Health
Environmental Surveillance and Assessment Section
Environmental Impacts Analysis Unit
625 Robert St N
PO Box 64975
St. Paul, MN 55164-0975
651-201-4899
health.hazard@state.mn.us
www.health.state.mn.us

Attachment 1.

MEMORANDUM

DATE: June 17, 2014

SUBJECT: Removal of the *trans*-1,2-Dichloroethylene (CASRN 156-60-5) Provisional Peer-Reviewed Toxicity Value (PPRTV) assessment from the Electronic Library

FROM: Scott Wesselkamper
Director, Superfund Health Risk Technical Support Center (STSC)
EPA/ORD/NCEA

TO: Michele Burgess (OSWER/OSRTI)
Lynn Flowers (NCEA)
Teresa Shannon (NCEA)
The File

It was brought to the attention of the STSC that there is an inconsistency in the conclusions regarding the derivation of a reference concentration (RfC) for *trans*-1,2-Dichloroethylene (DCE) between the 2006 PPRTV assessment and the 2010 IRIS assessment (http://www.epa.gov/iris/toxreviews/0418tr.pdf) for this chemical. The 2006 PPRTV assessment derived a chronic p-RfC of 0.06 mg/m^3 based on pulmonary and liver effects observed in the principal study by Freundt et al. (1977). No subchronic p-RfC was derived. The 2010 IRIS assessment found Freundt et al. (1977), a study by the National Toxicology Program (NTP, 2002), and an unpublished study by DuPont (1998) to be insufficient to support derivation of an RfC value for *trans*-1,2-DCE. Thus, there appears to be a fundamental difference in how the principal study and critical effect(s) used to derive the chronic p-RfC in the 2006 PPRTV assessment were evaluated compared to what was more recently done by IRIS. It is important to note that there are some differences in the respective decision-making processes for developing PPRTV and IRIS assessments, specifically with the IRIS Program having a more extensive review process (e.g., agency and interagency review steps, a public comment period, etc.) than that utilized for developing PPRTV assessments.

Pertinent information from the 2010 IRIS Toxicological Review on *trans*-1,2-DCE that outlines why the Freundt et al. (1977) study was discounted and no RfC value was derived is excerpted and italicized below:

"The finding of lung effects in the Freundt et al. (1977) study is difficult to interpret as this study is the only report of lung pathology in animals exposed to trans-1,2-DCE, a small number of animals were examined, several of the controls also developed this effect, and the upper respiratory tract was not examined for pathology."

"For each of the exposure durations, there was no statistically significant difference between the controls and the exposed groups with respect to the incidence of liver effects (fat accumulation). In general, however, the incidence and severity of fat accumulation increased with increasing exposure duration. Although Freundt et al. (1977) reported histopathologic changes in the liver of rats, the DuPont (1998) study did not corroborate the Freundt et al. (1977) study findings. DuPont (1998) reported relatively small increases in relative and absolute liver weight (1–8%) and no gross or microscopic changes of the liver attributable to trans-1,2-DCE at an exposure concentration 20-fold higher than that

used in the Freundt et al. (1977) study. NTP (2002a) similarly found no histopathologic changes in the liver when trans-1,2-DCE was administered for 90 days by the oral route at dietary concentrations as high as 50,000 ppm. In light of the results of DuPont (1998) and NTP (2002a), it is difficult to explain the liver findings in the single-exposure concentration study by Freundt et al. (1977). Given the limitations of the Freundt et al. (1977) study (i.e., small sample size, use of only one exposure concentration, and observation of fatty accumulation in the liver lobules and Kupffer cells in control animals at some exposure durations) and lack of corroboration from other studies, the Freundt et al. (1977) study was not used as the basis for deriving an RfC for trans-1,2-DCE."

"In summary, the available inhalation data from DuPont (1998) and Freundt et al. (1977) were considered insufficient to support reference value derivation and, therefore, an RfC for trans-1,2-DCE was not derived."

Current practice by the PPRTV Program states that once an IRIS assessment becomes available for any given chemical, the PPRTV assessment for that chemical is removed from the PPRTV electronic library. Thus, based on this practice and the rationale outlined above, it is recommended that the conclusions presented in the IRIS assessment for *trans*-1,2-DCE be presently adhered to, and the *trans*-1,2-DCE PPRTV assessment has been removed from the electronic library. Any additional questions regarding *trans*-1,2-DCE should be directed to the IRIS Hotline at (202) 566-1676 or http://www.epa.gov/iris/contact_hotline.htm.

References:

Freundt, K.J., G.P. Liebaldt and E. Lieberwirth. 1977. Toxicity studies on trans-1,2-dichloroethylene. Toxicology. 7: 141-153.

NTP (2002). NTP technical report on the toxicity studies of trans-1,2-dichloroethylene (CAS No. 156-60-5) administered in microcapsules in feed to F344/N rats and B6C3F1 mice. Public Health Service, U.S. Department of Health and Human Services; NTP TR 55. Available from the National Institute of Environmental Health Sciences, Research Triangle Park, NC and online at http://ntp.niehs.nih.gov/ntp/htdocs/ST_rpts/tox055.pdf

Exhibit 5

Technical Memo

Toxicity value for inhalation of trans-1,2-dichloroethylene (CASRN 156-60-5)

Prepared by Dr. Deborah Gray PhD., Stantec

April 22, 2022

In September 2010, the U.S. EPA Integrated Risk Information System (IRIS) published a chronic oral reference dose (RfD) of 0.02 mg/kg-day for trans-1,2-dichloroethylene (TDCE, CAS number 156-60-5). U.S. EPA IRIS summarized the available inhalation toxicity database for TDCE and concluded that the data were not sufficient to support development of an inhalation RfC at that time. The original IRIS summary is available at https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance_nmbr=314. The U.S. EPA Toxicological Review of cis-1,2-Dichloroethylene and trans-1,2-Dichloroethylene can be accessed at https://cfpub.epa.gov/ncea/iris/iris_documents/documents/toxreviews/0418tr.pdf. The agency did not publish inhalation reference concentration (RFC) for TDCE.

The Water Gremlin facility transitioned from trichloroethylene (TCE) to TDCE under agreements with the state in 2019. In the absence of an RFC for TDCE, the Minnesota Pollution Control Agency (MPCA) requested that the Minnesota Department of Health (MDH) develop site-specific Risk Assessment Advice (RAA) for concentrations of TDCE in ambient air to be incorporated into permit limits for the Water Gremlin facility. In 2019, the MDH published a chronic inhalation health benchmark for TDCE of 70 ug/m3. This value was based on an ingestion-to-inhalation (route to route) extrapolation from the U.S. EPA chronic oral RfD.

In May 2020, MDH published an updated RAA for TDCE establishing a sub-chronic inhalation health benchmark of 200 ug/m3 and a chronic inhalation benchmark of 20 ug/m3. The updated RAA was based on route-to-route extrapolation using a chronic oral RfD of 0.005 mg/kg-d derived in 2018 by California OEHHA. Both the U.S. EPA IRIS chronic oral RfD of 0.02 mg/kg-day and the 2018 OEHHA chronic oral RfD of 0.005 mg/kg-day were derived using data from the same sub-chronic oral dosing study (key study) with mice conducted by Shopp e.t al. (1985). The difference in chronic oral RfD values derived by U.S. EPA IRIS and OEHHA is explained by the selection of dose-response assumptions available in the U.S. EPA Benchmark Dose (BMD) modeling software. It should be noted that as of April 2022 U.S. EPA IRIS has not revised the BMD used to derive the chronic oral RfD of 0.02 mg/kg-day.

In September 2020, the U.S. EPA Superfund Program published a Peer-Reviewed Provisional Toxicity Value (PPRTV) chronic and sub-chronic provisional inhalation RfCs (p-RfC) for TDCE of 40 and 400 µg/m3. The chronic p-RfC value was used with standard default exposure assumptions to derive a residential Regional Screening Level (RSL) of 42 µg/m3. The residential RSL is intended to be protective of child and adult exposed to that concentration 24 hours/day, 350 days/year, for 26 years. The residential inhalation RSL for TDCE was first published in the November 2020 U.S. EPA RSL Tables.

The p-RfC and U.S. EPA residential inhalation RSL were derived from inhalation toxicity data and can be used and better reflect health benchmarks for TDCE emissions limits for the Water Gremlin facility. The RAAs established by MDH in 2019 and 2020 were derived from oral RfDs, but without discussion of the toxicological basis supporting a route-to-route extrapolation. In contrast, the September 2020 PPRTV[1] evaluated available studies and summarized potentially relevant noncancer data to evaluate potential points of departure for calculating inhalation RfCs for TDCE. Based on a 1998 study with a critical effect

[1] https://cfpub.epa.gov/ncea/pprtv/recordisplay.cfm?deid=349934F

of decreased lymphocyte counts, the screening subchronic p-RfC was set at 400 ug/m3 and the screening chronic p-RfC was set at 40 ug/m3.

Since the p-RfC and residential inhalation RSL are derived from the U.S. EPA expertise and risk assessment methodologies based on the specific and direct exposure pathway (inhalation rather than oral-to-inhalation extrapolated conversion), the U.S. EPA residential RSL for TDCE is the applicable and appropriate benchmark.

Deficiencies of Route-to-Route Extrapolation

The MDH RAA relied upon route-to-route extrapolation to derive an inhalation value from an ingestion value. In the case of TDCE, route-to-route was not appropriate, especially as inhalation studies for TDCE had been conducted. The IRIS database contains a evaluations for an oral RfD, inhalation RfC, and carcinogenicity, last updated 9/30/2010. The IRIS oral RfD value is 0.02 mg/kg/day. EPA evaluated available inhalation studies and considered them insufficient to support the derivation of an RfC. A previous value of 60 ug/m3 from the PPRTV database was removed in 2014 due to practice that once an IRIS assessment becomes available, as it did in 2010, the older 2006 PPRTV assessment would be removed.[2]

EPA published its Soil Screening Guidance with Appendix B[3]: Route-to-route extrapolation of inhalation benchmarks. Route-to-route extrapolation can be useful, but has important caveats, such as an assumption that the route of administration is irrelevant to the dose delivered to a target organ, "an assumption not supported by the principles of dosimetry or pharmacokinetics." Additionally, "Chemical-specific route-to-route extrapolations should be accompanied by a complete discussion of the data, underlying assumptions, and uncertainties identified in the extrapolation process. Extrapolation methods should be consistent with the EPA guidance presented in Methods for Derivation of Inhalation Reference Concentrations and Application of Inhalation Dosimetry."

In EPA's document *Methods for Derivation of Inhalation Reference Concentrations and Applications of Inhalation Dosimetry*[4], it explicitly states that:

> Oral data should not be used for route-to-route extrapolation in the following instances:
>
> (1) when groups of chemicals are expected to have different toxicity by the two routes;
>
> for example, metals, irritants, and sensitizers;
>
> (2) when a first-pass effect by the respiratory tract is expected;
>
> (3) when a first-pass effect by the liver is expected;
>
> (4) when a respiratory tract effect is established, but dosimetry comparison cannot be
>
> clearly established between the two routes;
>
> (5) when the respiratory tract was not adequately studied in the oral studies; and

[2] https://semspub.epa.gov/work/03/2218741.pdf
[3] https://semspub.epa.gov/work/11/175214.pdf
[4] https://www.epa.gov/sites/default/files/2014-11/documents/rfc_methodology.pdf

(6) when short-term inhalation studies, dermal irritation, in vitro studies, or characteristics of the chemical indicate potential for portal-of-entry effects at the respiratory tract, but studies themselves are not adequate for an RfC development.

In the case of TDCE, the respiratory tract was not adequately studied in the oral studies and short-term inhalation studies indicated potential for portal-of-entry effects at the respiratory tract. Therefore, MDH should not have used route-to-route extrapolation in the first place to derive an inhalation benchmark. Regardless, any rationale for undertaking a route-to-route extrapolation was rendered moot once US E.P.A. published the inhalation PPRTV.

Application of the Updated PPRTV

The conclusion that the PPRTV RfC is an appropriate standard is reinforced by the fact that EPA has already been using the updated toxicity value in their Regional Screening Level generic tables[5]. The November 2021 tables show the RfC as 4.0E-2 mg/3 and the resident air screening level as 42 ug/m3 based on default exposure factors. Since the PPRTV is a more relevant and recent value, is based on an inhalation study instead of oral ingestion, and is being used by EPA, MDH and MPCA must update their RAA and use the PPRTV value in risk assessment and permitting work, including for Water Gremlin.

Impact of Updated Tox Value

MPCA's Risk Assessment Screening Spreadsheet (RASS) combines default or refined air dispersion characteristics for a facility with emissions data and health based toxicity values to calculate screening level noncancer hazard and cancer risk levels. The ratio of an expected air concentration (ug/m3) to an RfC or screening level (ug/m3) is a unitless hazard quotient. The sum of hazard quotients from different chemicals and endpoints is a hazard index. According to Minnesota Statute 4717.8600[6], subpart 3c, "A hazard index of one or less indicates a combined concentration of chemicals unlikely to cause an adverse health effect to the general public." Based on MPCA guidance, risk assessments are entitled to one significant digit due to the estimation and uncertainty that surrounds the generation of toxicity values and estimations of dose. The RASS has this assumption included in its Summary tab, where the calculated risk in row 7 is compared to the guidance level in row 8 and both use one significant digit. The logic built into the formulae to determine whether the result receives an "OK" or "REFINE" flag compares the calculated risk to 1.49, which rounds down to 1.

Using the RfC of 40 ug/m3, which is conservative because it does not take into account the reduced exposure duration to residents or others in the area of the facility, if emissions from the coating rooms (STRU 73) were 100 tons per year, the total chronic noncancer hazard index would be one and, as stated in Minn. Stat 4717.8600 subp. 3c, the facility's emissions are unlikely to cause an adverse health effect to the general public.

Emissions of 100 tons per year from STRU 73 were calculated to produce a maximum annual concentration using five years of meteorological data from a nearby airport of 50.2 ug/m3. As this is above the 40 ug/m3 RfC, a secondary evaluation of the potentially affected target organ designated as blood/hematological yields a hazard quotient of 1.3, which is above 1.0. If the objective is to limit emissions to meet a hazard quotient of 1.0 or less, coating room emissions of 76 tons per year would be the applicable permit limit if the chronic level review is applied.

[5] https://semspub.epa.gov/work/HQ/401635.pdf
[6] https://www.revisor.mn.gov/rules/4717.8600/

Technical White Paper

Response to the Minnesota Department of Health's July 13, 2022, memorandum to the Minnesota Pollution Control Agency Regarding the MDH 2020 Risk Assessment Advice (RAA) for Trans-1,2-dichloroethylene

Prepared by Dr. Deborah Gray PhD., DABT, Stantec Consulting Services, Inc.

August 19, 2022

At the request of outside legal counsel for Water Gremlin, Stantec Consulting Services, Inc. (Stantec) reviewed the July 13, 2022, memorandum from James Kelly, Manager, Environmental Assessment and Surveillance Section, Minnesota Department of Health (MDH) to Kari Palmer, Manager, Air Assessment Section, Minnesota Pollution Control Agency (MPCA). The MDH memorandum indicates it was prepared as a follow-up to the MDH 2020 Risk Assessment Advice (RAA) for trans-1,2-dichloroethylene (TDCE). Water Gremlin previously questioned the scientific and technical basis for the MDH subchronic (200 $\mu g/m^3$) and chronic (20 $\mu g/m^3$) RAA concentrations of TDCE that MPCA subsequently relied upon to develop permit limits for Water Gremlin's air emissions and usage of solvent at their facility in White Bear Township. See, Stantec's Technical Memorandum submitted to the MPCA on April 22, 2022, incorporated herein by reference. The overarching technical issue is MDH's insistence on using toxicity values from an oral drinking water study to calculate a RAA concentration for TDCE in ambient air, rather than adopting an existing Provisional Peer Reviewed inhalation toxicity value (PPRTV) published by EPA that is directly relevant to evaluating exposure to concentrations of this chemical in ambient air. As detailed in their July 2022 memo to MPCA, in addition to entirely irrelevant comments regarding alleged past facility emissions of TCE to the community, the MDH rationale for not adopting the EPA inhalation reference concentration for setting air emissions limits for the Water Gremlin facility has numerous technical flaws and inconsistencies. The purpose of this White Paper is to provide a detailed discussion of Water Gremlin's concerns with the scientific basis for the MDH RAA and to address qualitative arguments presented by MDH to further support their decision. We have organized this White Paper to align with the major scientific and technical issues identified in Water Gremlin Company's Petition for a Contested Case Hearing Pursuant to Minn. Stat. Ch. 14 and Minn. R.7000.1800 and 7000.1900.

Issues of Fact Regarding the Validity of the MDH RAA

There is no dispute that the relevant exposure pathway for the Water Gremlin facility is through inhalation TDCE from the ambient air. However, as described below, MDH calculated the RAA for TDCE in ambient air for MPCA use in Water Gremlin's permit based on oral toxicity values (oral RfD) published by EPA (2010) and California EPA Office of Health Hazard Assessment (OEHHA, 2018). MDH used a method referred to as "route-to-route extrapolation" to convert a dose from ingestion to an air concentration. In 2019 and early 2020, there was no established reference concentration (RfC) for inhalation exposures to TDCE in air. However, in September 2020, before the MPCA issued the draft permit for Water Gremlin, EPA published screening level PPRTV reference concentrations (p-RfC) of 400 $\mu g/m^3$ for subchronic and 40 $\mu g/m^3$ for chronic exposures. It is Water Gremlin's contention that the EPA (2020) PPRTV p-RfC for subchronic and chronic RfCs of 400 $\mu g/m^3$ and 40 $\mu g/m^3$, respectively is the

relevant and defensible basis for incorporation into the facility's air emissions permit since these values were derived from an inhalation exposure study and is directly applicable to ambient air.

Method Used by MDH to Develop the RAA for Trans-1,2-Dichloroethylene

The MDH document *Health Based Guidance for Air, Toxicological summary for: trans-1,2-dichloroethylene* (MDH, 2020a) outlines their method to develop the Risk Assessment Advice (RAA) value for MPCA to use in the air emissions permit for the Water Gremlin facility. A companion document, *Water Gremlin Health Assessment Series. Trans-1,2-Dichloroethylene in Air and Health* (MDH, 2020b) describes how MDH developed RAA values at the request of MPCA to be used in the air emissions permit for Water Gremlin, and MDH conclusions about possible health risk.

MDH developed two RAA values for TDCE. The first RAA developed in January 2019 established a chronic RAA for TDCE of 70 µg/m^3 (the implied but not stated subchronic standard would be 700 µg/m^3). In April 2020, MDH replaced their previous RAA with new subchronic and chronic RAA concentrations for TDCE of 200 µg/m^3 and 20 µg/m^3, respectively. Both the 2019 and 2020 RAA values were derived from an oral reference dose (RfD) using the following formula for route-to-route extrapolation found in EPA (1996) *Soil Screening Guidance: Technical Background Document*. May. EPA/540/R95/128. The 2019 RAA was derived from the chronic oral RfD of 0.02 mg/kg-d currently posted on EPA IRIS (2010); the 2020 RAAs were derived from subchronic and chronic oral RfDs of 0.05 mg/kg-d and 0.005 mg/kg-d, respectively published by Cal-EPA OEHHA (2018).

RfC = RfD (mg/kg-d) x (70 kg/20m^3) x (1000 µg/mg)

Where:

RfC – inhalation Reference Concentration in µg of chemical/m^3 of air

RfD – oral Reference Dose in mg of chemical/kg body weight per day

70 kg – body weight of an adult human

20 m^3 – assumed volume of air breathed by an adult human every day

1000 µg/mg – conversion from mg to µg

Both the EPA IRIS (2010) oral RfD and the CalEPA OEHHA (2018) oral RfD that MDH used in their route-to-route calculation of RAA concentrations in 2019 and 2020 (MDH 2020a) come from the EPA (2010) review of the toxicology database for TDCE (and cis-1,2-DCE) in support of information on IRIS. EPA identified a subchronic (90-day) drinking water study with mice (Barnes et al. 1985; and Shopp et al., 1985) that was adequate to support derivation of an oral RfD for TDCE. In this two-part study, male and female mice were exposed to TDCE in drinking water for up to 90 days (90 days is considered a subchronic exposure in rodents because it is less than the average lifespan of most rats and mice – approximately 2 years). The doses of TDCE for male mice were 0 (controls), 17, 175, and 387 mg TDCE per kilogram body weight of the animals per day (mg/kg-d). The doses for female mice were 0 (controls), 23, 224, and 452 mg/kg-d. Barnes et al. 1985 as cited in EPA (2010) reported on the study design and measurements of body and organ tissue weights, and standard parameter values in blood.

In the second part of the study Shopp et al. 1985, as cited in EPA (2010), conducted a set of three commonly used tests of humoral immune response in the mice following 90 days of exposure to TDCE in drinking water: 1) number of Antibody Forming Cells (AFCs) in the spleen following a challenge with sheep red blood cells (sRBCs); 2) hemagglutinin titers in response to sRBCs; and 3) spleen cell response to B cell mitogen lipopolysaccharide (LPS). This battery of tests involves administering sRBC (foreign antigen) to the live animals after exposure to TDCE ended, waiting 4-5 days, sacrificing the animals, and examining cells from the spleens. Responses in the TDCE treated mice were compared to responses in the control animals (dose = 0). A decrease in AFCs/number of spleen cells following sRBC challenge compared to controls was the most sensitive treatment-related effect identified from this two-part study. Furthermore, only male mice had fewer AFC/number of spleen cells compared to controls. There were no significant differences in female mice compared to controls even though TDCE dose levels for the females were higher than for the males.

It should be noted that the candidate studies reviewed by EPA (2010) included different protocols and end points. EPA (2010) selected the Shopp et al. 1985 mouse drinking water study as the basis for deriving an oral RfD because the response to sRBC challenge in male mice was the most sensitive response identified at the lowest dose level among the candidate studies. The oral RfD (0.02 mg/kg-d) published on IRIS (September 2010) was derived from Shopp et al. (1985) using the EPA Benchmark Dose Technical Guidance (EPA, 2000) and BMDS software (versions 1.4.1 and 2.1.1) available at that time.

The *Summary of Guidance Value History* MDH (2020a) explains their decision to use the CalEPA OEHHA (2018) oral RfD as the basis for their revised route-to-route extrapolation of the RAA. CalEPA was critical of the benchmark dose modeling techniques used by EPA (2010) to derive the chronic oral RfD for TDCE of 0.02 mg/kg-day currently listed on the EPA IRIS webpage. MDH's summary of OEHHA (2018) criticisms of the dose-response model used by EPA in 2010 is not particularly enlightening, but references updates to EPA guidance for benchmark dose modeling and evolution of benchmark dose software models (BMDS). As stated above, the oral RfD currently on IRIS (EPA, 2010) was derived from the Shopp et al. 1985 data using the benchmark dose modeling tools available at that time. Since 2010, EPA has issued an updated technical guidance (EPA, 2012) and selection of BMDS software models. CalEPA OEHHA (2018) used newer versions of BMDS than presented by EPA in 2012 to re-evaluate the same data from the Shopp et al. 1985 drinking water study. This resulted in a revised chronic oral RfD of 0.005 mg/kg-d.

A Note about Benchmark Dose and Benchmark Dose Modeling Software

For some data sets with multiple dose levels and subjects per dose level, the Point of Departure (POD) for subsequent derivation of non-cancer toxicity factors such as the oral RfD and inhalation RfC can be estimated using threshold dose-response models. EPA defines the Benchmark Dose (BMD) as "*an exposure due to a dose of a substance associated with a specified low incidence of risk, generally in the range of 1% to 10%, of a health effect; or the dose associated with a specified measure or change of a biological effect*." The selection of Benchmark Dose Software (BMDS) models continues to evolve to accommodate different study designs and variables. EPA's BMDS webpage provides easy access to numerous dose-response models that the user may select from and/or compare, to make predictions about the quantitative relationship between the dose or exposure of a chemical or chemical mixture associated with a given response level.

The fact that BMDS models are continually evolving provides important context to understand CalEPA OEHHA (2018) critique of the EPA (2010) oral RfD for TDCE as summarized by MDH (2020a). This will become important as EPA itself would later apply updated BMDS software to derive the PPRTV.

Limitations of MDH Use of Route-to-Route Extrapolation to Derive Inhalation Toxicity Values from Oral Toxicity Values

There are two major routes by which chemicals in the ambient or personal environment get into a person's body: oral – (1) ingestion of the chemical in drinking water, food or non-dietary items such as soil that are absorbed through the gastrointestinal tract; and (2) inhalation – breathing the chemical into the respiratory tract. Dermal absorption through the skin can also occur but generally contributes less to human exposures from environmental media than inhalation or ingestion and is not relevant to the issues at hand. The same chemical may cause different types of health effects, or the effects may occur at higher or lower levels depending on the route of exposure. Thus, it cannot be assumed that the dose-response relationship of a chemical from inhalation is comparable to that from ingestion. Therefore, **it is always more technically defensible to evaluate inhalation exposure to chemicals in the air using toxicity values derived from inhalation studies, and ingestion exposures using toxicity values derived from oral dosing studies.**

There may be situations where the toxicology and health effects database for a chemical may not support derivation of toxicity values for both the oral and inhalation routes of exposure, and in that event, there may be circumstances in which route-to-route extrapolation is unavoidable. In the Soil Screening Guidance, EPA (1996) acknowledged that inhalation toxicity benchmarks may not be available on IRIS for some of the common contaminants found at Superfund Sites and lays out limitations and guidelines where route-to-route extrapolation may be used to calculate screening levels. See Section 2.1.4 Route-to-Route Extrapolation and APPENDIX B Route-to-Route Extrapolation of Inhalation Benchmarks of the Soil Screening Guidance (EPA 1996) for a more detailed discussion. However, note EPA's important caveats for extrapolated inhalation benchmarks.

> "*…the extrapolated inhalation SSL values are not intended to be used as generic SSLs for site investigations; the extrapolated inhalation SSLs are useful in determining the potential for inhalation risks but should not be misused as SSLs.* ***The extrapolated inhalation benchmarks, used to calculate extrapolated inhalation SSLs, simply provide an estimate of the air concentration (µg/m3) required to produce an inhaled dose equivalent to the dose received via oral administration, and lack the scientific rigor required by EPA for route-to-route extrapolation. Route-to-route extrapolation methods must account for a relationship between physicochemical properties, absorption and distribution of toxicants, the significance of portal-of-entry effects, and the potential differences in metabolic pathways associated with the intensity and duration of inhalation exposures.*** *… The document, entitled Methods for Derivation of Inhalation Reference Concentrations and Application of Inhalation Dosimetry (U.S. EPA, 1994d), presents methods for applying inhalation dosimetry to derive inhalation reference concentrations and represents the current state-of-the-science at EPA with respect to inhalation benchmark development. The fundamentals of inhalation dosimetry are presented with respect to the toxicokinetic behavior of contaminants and the physicochemical properties of chemical contaminants."*

As referenced in the Soil Screening Guidance (EPA 1996) quoted above, Methods for Derivation of Inhalation Reference Concentrations and Application of Inhalation Dosimetry (EPA 1994) further elaborates on the data requirements and limitations of extrapolating inhalation toxicity values from oral exposure data. Section 4.1.2 Route-to-Route Extrapolation states:

> *"When the data base for a given chemical is not adequate via inhalation, route-to-route extrapolation is often practiced by some risk assessors using empirically derived factors that are not necessarily applicable to the case at hand. For most route-to-route extrapolations, the lack of data, lack of ability to interpret data, and underutilization of existing data due to insufficient models and statistics* ***reduce or eliminate the validity of these extrapolations****" (emphases added.)*

EPA further stated:

> "*Oral data should not be used for route-to-route extrapolation in the following instances:*
>
> *(1) when groups of chemicals are expected to have different toxicity by the two routes: for example, metals, irritants, and sensitizers*
>
> *(2) when a first-pass effect by the respiratory tract is expected*
>
> *(3) when a first-pass effect by the liver is expected*
>
> *(4) when a respiratory tract effect is established, but dosimetry comparison cannot be clearly established between the two routes*
>
> *(5) when the respiratory tract was not adequately studied in the oral studies; and*
>
> *(6) when short-term inhalation studies, dermal irritation, in vitro studies, or characteristics of the chemical indicate potential for portal-of-entry effects at the respiratory tract, but studies themselves are not adequate for an RfC development."*

These limitations readily apply to the MDH's use of oral to inhalation route-to-route extrapolations for TDCE. Although MDH acknowledges the uncertainties in route-to-route extrapolation, nowhere in their analysis do they provide a discussion that any of the critical information requirements set out in the EPA guidance documents (EPA 1994 and 1996) have been considered and addressed. Consequently, the use of their extrapolated TDCE RAA values for enforceable standards in Water Gremlin's air emissions permit is not supported by adequate data or reasoning.

Material Issues of Fact as to Whether the EPA TDCE PPRTV Provides a Superior Benchmark for Setting Water Gremlin Permit Limits to the MDH RAA

When EPA performed their toxicological review of cis and TDCE in 2010, they determined that the inhalation toxicology database was not adequate to support derivation of a Reference Concentration (RfC) under the requirements of the IRIS program. In 2020, EPA re-visited the inhalation toxicology database for TDCE and identified a 90-day subchronic inhalation study with male and female rats (DuPont/Kelly 1998) that was relevant for derivation of Provisional Peer Reviewed Toxicity Value (PPRTV) screening level subchronic and chronic RfCs of 400 µg/m^3 and 40 µg/m^3, respectively. The critical effect from the key study (DuPont/Kelly 1998) was a dose-related decrease in white blood cells

(leukocytes), also potentially related to an immune system response to the exposure. As stated by EPA (2020).

> *"The benchmark concentration lower confidence limit 1 SD (BMCL1SD) (HEC) of 109 mg/m3 for decreased lymphocyte counts in males at Day 90 from the subchronic-duration rat study (Kelly, 1998) is the lowest candidate POD in the available inhalation toxicity database for trans -1,2-DCE. In summary, Kelly (1998) is selected as the principal study because it identified the most sensitive POD and was adequate in experimental design and protocol. However, because the study was not peer reviewed, screening-level p-RfC values were derived for trans-1,2-DCE in Appendix A, in lieu of p-RfC values."*
>
> *"As discussed in the main body of the report, Kelly (1998) was an adequately designed subchronic study that evaluated several endpoints following exposure to three concentrations of trans-1,2-DCE. This study was chosen as the principal study and the corresponding benchmark concentration lower confidence limit 1 standard deviation (BMCL1SD) human equivalent concentration (HEC) of 109 mg/m3 for decreased lymphocyte counts in male rats was identified as the most sensitive point of departure (POD) for deriving screening-level p-RfC values. The observed leukopenia in rats (decreased white blood cell [WBC] and lymphocyte counts) was determined to be treatment related and suggests potential effects on the immune system. The critical effects for deriving a chronic oral reference dose (RfD) were based on altered immune function in mice (U.S. EPA, 2010), which provide additional evidence to suggest that trans-1,2-DCE targets the immune system. The Kelly (1998) study used whole-body inhalation exposure for compound administration; therefore, additional exposure through the gastrointestinal tract due to grooming is possible. This potential source of uncertainty cannot be quantified based on the available information. As a conservative estimate, the identified critical effects are assumed to be mostly due to inhalation exposure."*

EPA (2020) derived the current screening level p-RfC for TDCE using the data from the Kelly (1998) inhalation study with rats consistent with the most recent EPA BMD Technical Guidance (EPA 2012) and using BMDS version 3.1 to model benchmark concentrations. As noted previously, dose-response datasets may have different characteristics depending on study design and outcomes being measured. One size does not fit all when it comes to dose-response models. The BMDS version 3.1 dose response model that provided a good fit to the data from the Kelly (1998) inhalation study was not available at the time of EPA's 2010 toxicological review and derivation of the oral RfD for IRIS.

It is unclear why MDH readily adopted the OEHHA (2018) oral RfD, which was based on updated BMDS software, as the basis for extrapolating their May 2020 subchronic (200 µg/m^3) and chronic (20 µg/m^3) RfCs for TDCE, but chose to disregard EPA's analogous use of updated BMDS models to derive subchronic and chronic PPRTV p-RfCs from the Kelly (1998) inhalation study (EPA 2020).

In their July 22, 2022, memo, MDH relies almost entirely on the discussion of inhalation studies in EPA (2010) to discount the Kelly (1998) study as an inferior and unreliable basis for

derivation of a RfC. MDH also asserts that the Kelly (1998) study is inferior to the Shopp et al. 185 drinking water study because the former did not perform specific assays to evaluate the effects of TDCE on the immune system. There are two fallacies in this argument by MDH.

1) When EPA conducted their toxicological review in 2010, they compared the available inhalation studies back to a subchronic inhalation study conducted by Freund et al. 1977 (as cited in EPA 2010) which reported fatty changes in the livers of female rats. The Freundt study had significant design limitations such as a single TDCE exposure concentration and small number of animals. It should be noted that the PPRTV derived from this study (EPA 2006) was subsequently withdrawn from the electronic library (EPA 2014), triggering MDH's stated concern that the current PPRTV (EPA 2020) could be withdrawn in the future. EPA (2010) did not further consider the Kelly 1998 study because it did not corroborate the liver toxicity reported by Freundt – not because the Kelly study was poorly designed.

2) The fact that Kelly 1998 did not include specific immune system assays does not make it inferior to Shopp et al. 1985 or disqualify it as the basis for deriving a RfC. Each candidate study is evaluated on its own merits and findings. The accepted protocol is to identify the key study (based on design and quality) and the critical effect that was observed at the lowest dose compared to the controls. As stated clearly by EPA (2020) the Kelly 1998 subchronic rat inhalation study meets those requirements.

We know of no reason why EPA's (2020) re-evaluation of the inhalation toxicity database for TDCE under the PPRTV program would not be a more relevant and scientifically defensible basis for MDH RAA than extrapolation from an oral dosing study.

The screening level inhalation p-RfC is the relevant and technically defensible concentration for use in the air permit for Water Gremlin.

Sequential Exposure to TCE Followed by TDCE

MDH states the community near Water Gremlin was exposed to TCE emitted by the facility for years prior to Water Gremlin eliminating use of TCE and switching to TDCE; and the *"TDCE exposure may be cumulative of the TCE exposure because both are industrial chlorinated solvents*." This is an overly broad statement with no basis in the health effects literature. MDH does not offer any human or laboratory animal studies, comparison of toxicokinetics or mode of action or epidemiological data that would support this speculation. Neither TCE nor TDCE bioaccumulate and both are quickly metabolized and excreted through the lungs and kidneys. Moreover both have a relative short half-life in air (5 to 12 days for TDCE and 7 days for TCE). MDH does not provide evidence or discussion as to how the low levels of TDCE measured in the air at the Water Gremlin facility ambient monitoring locations increase the inferred risk from previous air emissions of TCE. In fact, in their April 2022 Water Gremlin Public Health Assessment: Public Comment Draft, MDH concludes that "*past or current t-DCE …air emissions are not expected to harm people's health.*" Thus, their own evaluation appears to contradict any statements regarding sequential exposure.

COVID-19 May Exacerbate the Effects of TDCE Exposure

Considering the conclusion of no past or current harm to people's health from TDCE, it is difficult to understand the origin of this MDH speculation. MDH does not present evidence specific to potential interactions between TDCE (or closely related chemicals) and any aspect of COVID-19 transmission or severity of disease outcomes. The articles MDH references are general in nature and more relevant to the distribution of ubiquitous air pollutants such as nitrogen oxides and population density. The studies MDH references in their July 13, 2022, memo to MPCA were available prior to publication of their April 2022 Water Gremlin Public Health Assessment: Public Comment Draft. If this was a genuine concern, why did MDH not include a discussion? Such a statement would of course apply to all similar chemicals in air, which in theory should prompt revision of emission limits for all facilities using similar chemicals in their industrial processes.

Public Health would be Protected

Water Gremlin disagrees with MDH's numerous arguments that public health would not be protected if the screening level p-RfC (EPA 2020) was the basis for air emissions limits for TDCE rather than the MDH RAA extrapolated from the CalEPA OEHHA (2018) revised oral RfD. There is no rational or scientific basis for this conclusion. EPA considers p-RfCs to be appropriately protective of public health and uses these values in risk assessments at sites all over the country.

At one point in their July 13, 2022, memo MDH noted that a previously published inhalation PPRTV (EPA 2006) RfC value was withdrawn from the electronic library in 2014 because the EPA (2010) toxicological review concluded that the key study (an inhalation study with rats conducted by Freund et al. 1977 as cited by EPA (2010)) was not adequate to support derivation of an inhalation RfC. MDH expressed concern that the current (EPA 2020) PPRTV inhalation value could be withdrawn at some time in the future. This is unhelpful. One could as easily say that the extrapolated CalEPA data relied upon by the MDH could be withdrawn at some time in the future.

MDH implies that because their route-to-route extrapolated RAA (MDH 2020a) subchronic (200 $\mu g/m^3$) and chronic (20 $\mu g/m^3$) values for TDCE are lower than the EPA (2020) PPRTV subchronic (400 $\mu g/m^3$) and chronic (40 $\mu g/m^3$) values, that they are more protective of public health. This conclusion does not follow from the process used to develop RfDs and RfCs from the toxicology and health effects database. In addition, this assertion obscures the layers of protectiveness built into EPA's process for deriving RfD and RfC values starting with the POD from the critical effect in the key study selected to support the toxicity factors. As mentioned previously, EPA (2010 and 2020) and CalEPA OEHHA (2018) used the versions of BMDS software that best fit the data for the critical effect in the key studies to derive a POD for subsequent derivation of the oral RfD and inhalation p-RfC. In each case, the POD was adjusted downward by the application of uncertainty factors (UFs) to account for the quality of the data: UF =10 for extrapolation from a 90 day chronic study to a lifetime chronic exposure; UF = 10 extrapolation of laboratory animal data to humans; UF = 10 for variable sensitivity of members of the human population; and UF = 3 for deficiencies and gaps in the database such as lack of a multi-generation study. Both the oral RfD (EPA 2010 and OEHHA 2018) and the PPRTV p-RfC (EPA 2020) represent levels of exposure **3,000 times lower** than the lowest exposure level for the critical effect in the key animal study, the Shopp et al. 1985 mouse drinking water study and the DuPont/Kelly 1998 inhalation study with rats. MDH has not offered any data or studies to support a conclusion that the EPA PPRTV is not protective of public health.

The key difference here is that only the PPRTV p-RfC is directly relevant to inhalation of TDCE in ambient air; and therefore should be used as the basis for air emissions limits in the Water Gremlin facility permit.

References and Documents Cited

US EPA (EPA), 1994. Methods for Derivation of Inhalation Reference Concentrations and Application of Inhalation Dosimetry. EPA/600/8-90/066F. October.

EPA, 1996. Soil Screening Guidance: Technical Background Document. EPA/540/R95/128. May.

EPA, 2010. Toxicological review of cis-1,2-dichloroethylene and trans-1,2-dichloroethylene (CAS nos. cis 156-592-5: trans 156-60-5: mixture 540-59-0). In support of summary information on the Integrated Risk Information System (IRIS). September. Available on-line at: https://cfpub.epa.gov/ncea/iris/iris_documents/documents/toxreviews/0418tr.pdf

EPA, 2012. Benchmark Dose Technical Guidance. EPA/100/R-12/001. June. Available on-line at: https://www.epa.gov/sites/default/files/2015-01/documents/benchmark_dose_guidance.pdf

EPA, 2014. Superfund Health Risk Technical Support Center Memorandum dated June 17, 2014 from Scott Wessekamper. "Removal of the trans-1,2-dichloroethylene (CASRN 156-60-5) Provisional Peer Reviewed Toxicity Value (PPRTV) assessment from the Electronic Library.

EPA, 2020. Provisional Peer Reviewed Toxicity Values for Trans-1,2-dichloroethylene. EPA/690/R-20/006F. September.

EPA, 2022. Benchmark Dose Software Models. Available on-line at: https://www.epa.gov/bmds/about-benchmark-dose-software-bmds

Minnesota Department of Health (MDH). 2020a. Air Toxicological Summary for: trans-1,2-dichloroethylene. Health Based Guidance for Air. May. Available on-line at: https://www.health.state.mn.us/communities/environment/risk/docs/guidance/air/tdcesumm.pdf

MDH, 2020b. Water Gremlin. Health Assessment Series I. Trans-1,2-dichloroethylene in air and health. Available on-line at: https://www.health.state.mn.us/communities/environment/hazardous/docs/sites/ramsey/wgtdceairhealth.pdf

MDH, 2022a. Water Gremlin Public Health Assessment: Public Comment Draft, April 2022. Available on-line at: https://www.health.state.mn.us/communities/environment/hazardous/docs/sites/ramsey/phapubliccomment.pdf

MDH. 2022b. Attachment 9. MDH trans-1,2-dichloroethylene Risk Assessment Advice Follow-up. Memo from James Kelly, Manager, Environmental Assessment and Surveillance Section, to Kari Palmer, Manager, Air Assessment Section, Minnesota Pollution Control Agency. July 13.

Deborah Gray PhD, DABT

Principal Toxicologist
40 years of experience · Columbus, Ohio

Dr. Gray has over 30 years of experience in the areas of environmental health, toxicology and environmental epidemiology, and human health and ecological risk assessment, and is certified as a Diplomate of the American Board of Toxicology (DABT). She has a wide range of experience in government, private sector consulting, and academia, and has worked on a variety of projects in the field of environmental and occupational health. Prior to joining Stantec, Dr. Gray held positions with other environmental consulting firms, the Ohio Department of Health, the Ohio Environmental Protection Agency, and the Ohio State University (OSU) College of Public Health. She has served as an expert consultant, and testified as an expert in human health toxicology in a variety of cases. She has provided real-time consultation on exposure assessment during emergency response to releases. Dr. Gray previously held an appointment as Clinical Associate Professor in the OSU College of Public Health, Division of Environmental Health Sciences where she had primary responsibility for teaching graduate level courses in Environmental Health, Community Emergency Response, Risk Assessment, and Toxicology, and advising graduate students.

EDUCATION

PhD, Physiology and Pharmacology (Toxicology), The Ohio State University, Columbus, OH, 1990

MS, Entomology (Invertebrate Toxicology), The Ohio State University, Columbus, OH, 1977

BS, Microbiology, The Ohio State University, Columbus, OH, 1973

REGISTRATIONS

Diplomate, American Board of Toxicology, Inc., 1996-2021

MEMBERSHIPS

Member, Society for Risk Analysis

Member, Society of Toxicology

PROJECT EXPERIENCE

HUMAN HEALTH RISK ASSESSMENT

Amtrak Confidential Project | Confidential Location | 2017-Present | Project Oversight

Deb is working with the Stantec team to support Amtrak on a sensitive project involving investigation and evaluation of potential exposures to PCBs in a highly public transportation venue (2017). She contributed to the risk assessment and sampling strategy for the Remedial Investigation Work Plan and conducted a preliminary assessment of exposure to airborne PCBs in the public areas of the venue. This project is ongoing as of 2018. Deb and her team have been reviewing analytical results for PCBs in air, dust, concrete chip and ballast samples in anticipation of a preliminary risk assessment. Role: Project Oversight | Cost: Unknown | Dates involved: 04/2017-Ongoing

Arbor Hills Landfill, LLC | Michigan

Dr. Gray and her team supported Arbor Hills Landfill (BFI/Republic Services) in responding to a Notice of Violation from Michigan DEQ resulting from community complaints about odors from the landfill and concern over exposures. Stantec prepared a final report summarizing air monitoring data in March 2017.

Northrup Grumman Facility | Salt Lake City, UT

Dr. Gray and members of her team conducted a human health risk assessment for this Northrup Grumman facility that produces highly sensitive defense-related guidance systems. The HHRA involved evaluation of chlorinated solvents and metals in groundwater, soil, and indoor air (2017).

Tennessee Valley Authority Environmental Investigations | Statewide, Tennessee | 2017-Present | Risk Assessment Discipline Lead

Deb is the risk assessment discipline lead on the Stantec team supporting the Tennessee Valley Authority (TVA) in complying with the Coal Combustion Residuals (CCR) Rule and Tennessee Department of Environmental Conservation (TDEC) orders to conduct environmental investigations of their fossil plants in Tennessee. Deb and her team contributed to the development of Sampling and Analysis Plans in advance of field investigations and are currently developing Conceptual Site Models for human health and ecological risk assessment of CCR materials (primarily trace metals-arsenic, boron, lead, and selenium). Role: Risk Assessment Discipline Lead | Cost: Unknown | Dates involved: 03/2017-Ongoing

Amtrak Former Fueling Facility | Wilmington, DE

Conducted a human health risk assessment for PCBs, PAHs, and metals (arsenic) in soil at the Former Fueling Facility on the Amtrak rail yard in Wilmington, DE. (2017) The human health risk assessment is an integral part of the Focused Feasibility Study for this complex site and supports preferred management alternatives for mitigating potential pathways of exposure through strategic placement of future buildings and pavement and controlling land use.

Former Satralloy Chromium Ore Refining Site | Steubenville, OH

Dr. Gray has been the human health risk assessor/toxicologist with the team of consultants working on the former Satralloy chromium ore refining site since 2006. This site is under the jurisdiction of Ohio EPA and is owned by Freeport-McMoran. Stantec is currently (2017) a sub-consultant to Golder Associates on this project. The primary constituents of concern on this site are hexavalent chromium, arsenic and manganese.

Evaluation of Vapor Intrusion-Multiple Sites

Dr. Gray along with Stantec's subject matter expert in contaminant intrusion have evaluated the risks from solvents (including TCE) migrating from sub-surface sources to indoor air at multiple sites across the U.S. Vapor intrusion has become a common feature of projects conducted for real estate developers and major industrial clients (ongoing 2017).

Safety Data Sheets

Dr. Gray is the senior toxicology reviewer for Safety Data Sheets (SDS) that Stantec has been developing for several clients. These projects involve developing new SDS and converting MSDS to comport with the Global Harmonization System. Dr. Gray and her team have developed SDS for a variety of products including: stone and construction products; crude oil and gas from various natural reservoirs; metal finishing products; and manufacturing residuals sold as products/ingredients for other manufacturing processes.

Countywide Recycling and Disposal Facility | Risk Assessment

An exothermic reaction in the waste mass of this operating landfill caused excessive gas production and off-site odors. Dr. Gray designed and supervised the implementation of an ambient air monitoring program to evaluate exposure and potential risk associated with air emissions from this landfill near Canton, OH. The constituents of concern included volatile organic compounds (benzene), aldehydes, and dioxins/dibenzofurans. The work performed by Dr. Gray and her staff assisted Countywide in complying with Ohio EPA Director's Findings & Orders (2006 to 2014). Dr. Gray and her team prepared a summary of all community air monitoring activities in support of Countywide's request to terminate the monitoring. Ohio EPA approved Countywide's request in 2015.

Kilgore Farm / Former Manufacturing Facility** | Westerville, OH

Otterbein College owned the 11-acre property and planned to redevelop the site to residential standards as part of the college's expansion. Dr. Gray conducted a baseline human health and ecological risk assessment for this former U.S. Army explosives manufacturing facility, and developed risk-based remedial goals to be used in conjunction with land-use restrictions.

Brownfield and NPL Sites** | Various States | Risk Assessments

Principal author of the risk assessment for the Water Tower Park (formerly Coit Road) brownfield/VAP site in Cleveland, and senior risk assessor for the following projects:

-Dominion Homes - Weston Woods development on a former skeet range in west Columbus, OH.
-Former shooting range in Canal Winchester, OH that is now a residential development.
-Tower Parking Garage in Cincinnati, OH.
-Harrison Properties, Franklin County, OH.
-Granville Solvents site, Granville, OH.
-Former tannery site near Chicago, IL.
-Lexington Bluegrass Army Depot, KY.
-Ft. Rucker, KY.
-Ft. McAllister, OK.
-Rocky Flats, CO solar pads.

Clean Ohio Assistance Fund Site*

Performed VAP compliant risk assessment as part of the Phase II report for several Clean Ohio Assistance Fund sites in northern Ohio. Several of these sites had residual petroleum contamination, and one was a former MGP site in Warren, OH.

Proposed Municipal Solid Waste Landfill* | Marana, AZ | Risk Communication

Dr. Gray evaluated the potential for members of the surrounding community for exposure to waste constituents from the landfill and addressed community concerns about health effects such as cancer and birth defects in a public hearing before the Marana Town Council (2010).

FirstEnergy* | Pennsylvania | Risk Assessment

Dr. Gray assisted FirstEnergy in evaluating pathways of exposure and potential health effects from an accidental release of partially combusted coal ash from the company's Bruce Mansfield Plant. Dr. Gray prepared a written report, met with Pennsylvania regulators and participated in two community meetings.

** denotes projects completed with other firms*

Republic Services/Bridgeton Landfill, LLC | Missouri

Starting in 2012, Dr. Gray has been working with Stantec health and safety professionals to characterize constituents in landfill gas and ambient air at a closed sanitary landfill near St. Louis, Missouri (MO). Stantec was retained by Lathrop & Gage, LLP on behalf of Bridgeton Landfill. An exothermic reaction in the waste mass resulted in excess gas and leachate production subsidence and off-site odors. The objective of the project was to identify chemical constituents of an atypical odor and evaluate potential exposures to people working on the landfill and off-site receptors. Dr. Gray is currently (2017) providing expert consulting in human health toxicology to Republic Services/Bridgeton Landfill and their outside counsel Lathrop & Gage. The Stantec team conducted comprehensive sampling of landfill source gas and ambient air to assist Republic/Bridgeton in complying with the requirements of Orders issued by the Missouri Department of Natural Resources (MDNR) and the state Attorney General.

Little Blue Run, FirstEnergy* | Pennsylvania | Risk Assessment

Dr. Gray conducted a human health risk assessment to evaluate potential exposures to inorganic constituents in groundwater and surface water believed to be related to the FirstEnergy coal ash disposal pond designated as Little Blue Run. She also assisted outside legal counsel with responding to resident questions/concerns and provided senior review for an ecological risk assessment for the same disposal pond (2009-2011).

Heleva Landfill Superfund Site Vapor Intrusion Investigation | Pennsylvania | 2012 | Health Assessment

Dr. Gray evaluated findings from sub-slab and indoor air sampling conducted in private residences situated overtop of groundwater contaminated with chlorinated solvents in a small village in Pennsylvania. Her analysis integrated the findings with respect to potential sources within the homes, sources and risks associated with the same constituents in ambient air and potential contributions from vapor intrusion.

Former Manufactured Gas Plants | Michigan and Illinois | Risk Assessment

Conducted an exposure pathways evaluation for a former MGP site that is now a popular downtown recreational area in downtown Detroit. Dr. Gray and her team worked with the client, the City of Detroit and the Michigan DEQ on investigation strategies. Developed risk-based ambient air monitoring criteria to support remedial activities at a MGP site in Illinois.

Ohio EPA Multidisciplinary Board** | Ohio | Co-chair of Work Group

Dr. Gray was appointed by the director of the OHIO EPA to the Multidisciplinary Board to review the rules for Ohio's Voluntary Action Program in 2001. As Co-chair, Dr. Gray was involved in reviewing risk-based standards for the Ohio VAP. Dr. Gray also participated in the review of VAP fees in 2006 and was reappointed to the Board in 2006 for the five year technical rules review and co-chaired the work group reviewing risk assessment rules. As co-chair, Dr. Gray's responsibility was to build a consensus on technical issues related to risk assessment.

Ohio EPA Waste Management Cleanup Standards** | OH | Academic Reviewer

Dr. Gray was invited as an academic reviewer for the Ohio EPA Waste Management Cleanup Standards risk assessment harmonization project.

Coit Road and Brownfield Redevelopment Site** | Ohio VAP | Cleveland, OH

Dr. Gray was the primary author of the human health and ecological risk assessment for this former GM/Fischer Body Plant manufacturing facility. The risks assessment supported cost-effective redevelopment of this large property by the Ohio Department of Administrative Services.

Workplace Setting** | Employee Health Complaint Investigations

Directed and participated in investigations of employee health complaints in workplace setting and investigations of health complaints potentially related to residential environments.

Indoor Environmental Quality Investigations** | Principal-in-Charge

Dr. Gray and her team conducted numerous indoor environmental quality investigations, including evaluation of occupant health complaints potentially related to biological and chemical agents in the indoor environment.

Human Health Risk Assessments** | Various States | Risk Assessments

Dr. Gray has conducted and reviewed both human health and ecological risk assessments for CERCLA; RCRA; Department of Energy and Department of Defense sites; state voluntary clean up (brownfields programs in Ohio, Illinois, Michigan, Indiana, and California; and petroleum contaminated sites in Ohio. She has conducted risk assessment projects for federal, state, municipal, and private sectors' clients. Dr. Gray's specialty is in the evaluation of human health and ecosystem toxicity of chemical and radiological agents.

Toxicology of Consumer Products** | Confidential | Toxicology Assessment

Dr. Gray evaluated toxicity testing information for ingredients in horticultural consumer products including labeling recommendations (2011 to 2012).

** denotes projects completed with other firms*

Toxicologist in Residence** | Columbus, Ohio

Toxicologist in Residence for the Columbus Health Department and Program Director for the City's Environmental Science Advisory Committee (ESAC). Issues addressed included drinking water quality related to herbicides and disinfection by-products; evaluation of community exposures from an explosion at a phenol-formaldehyde resin manufacturing facility; and potential community exposures to airborne release of dioxins / dibenzofurans from the City's former waste to energy facility (1998-2004).

La Cienega Creative Properties | Los Angeles, CA | 2014-2016 | Project Oversight and Technical Support

Deb supervised and provided technical input and quality review for the screening level HHRA of multiple Areas of Concern on this large commercial property. Volatile organic compounds in groundwater and vapor intrusion were the primary concerns at this site. The site is under the jurisdiction of the Los Angeles (LA) Regional Water Quality Control Board. Role: Project Oversight and Technical Support | Cost: Unknown | Dates involved: 03/2014-05/2016

Brewer's Yard Apartments | Columbus, Ohio

Dr. Gray and her team worked with the owners of this property in downtown Columbus to address and resolve concerns raised by Ohio EPA regarding soil contamination with polynuclear aromatic compounds (PAHs) and potential vapor intrusion related to naphthalene.

Risk Assessment Consultant - Underground Storage Tanks** | Ohio | 1999-2002

Dr. Gray was retained by the Ohio Bureau of Underground Storage Tank Regulations (BUSTR) to assist in clearing their backlog by reviewing risk-based closure reports to develop recommendations and work one-on-one with BUSTR Site Coordinators to resolve issues so that numerous projects could be closed. She also provided a formal training course in the basics of toxicology and risk assessment for the BUSTR Site Coordinators.

Pacific Gas & Electric Facility | Emeryville, California | 2012-2013 | Project Oversight

Deb and her team conducted a multi-pathway human health risk assessment for this active materials handling facility in a mixed commercial and residential neighborhood. Future re-development of the property was being considered and is likely to be consistent with the surrounding neighborhood, including residential. The major constituents of concern were chlorinated solvents in groundwater and indoor vapors, and arsenic in soil. Role: Project Oversight | Cost: Unknown | Dates involved: 10/2012-12/2013

Darby Creek Tank Farm | Pennsylvania

Dr. Gray supervised and provided technical input and quality review for the human health risk assessment of three Areas of Interest on the Darby Creek Tank Farm, near Philadelphia, Pennsylvania (PA). The HHRA was prepared consistent with PA Department of Environmental Protection (PDEP) guidance on behalf of Evergreen Resources Management (2014-2017).

Petro Resources Capital | Arvin, CA | Legal Support

Dr. Gray was a member of the Stantec team supporting Petro Resources Capital and their outside legal counsel in evaluating potential exposures to residents whose homes were (reportedly) impacted by a release of wellhead gas from a nearby pipeline (2014).

Marcus Hook and Philadelphia Petroleum Refineries | Philadelphia, PA | 2015 | Health Assessment

Dr. Gray is working with the Stantec team in West Chester, PA to evaluate exposures from petroleum-related VOCs in ambient air and indoor air, and determine the potential for vapor intrusion in selected buildings on these operating refineries. The air sampling is part of the environmental investigations at both facilities.

Multiple Sites in California

Dr. Gray and her team have conducted numerous Tier 1 and Tier 2 human health risk assessments for projects of varying sizes and complexities in California. The regulatory venues have included DTSC, the San Francisco Bay Area Regional Water Quality Control Board and the Los Angeles Regional Water Quality Control Board as well as local jurisdictions. Most of the projects have addressed potential risks from residual petroleum hydrocarbons, chlorinated solvents, arsenic and residual pesticides. Several of these projects have involved Chevron sites. Pathways of exposure considered in the risk assessments include vapor intrusion, and direct contact with soil and groundwater.

Tier 1 and Tier 2 Human Health Risk Assessments | Multiple Sites, California | 2012-2018 | Project Oversight

Deb and her team have conducted numerous Tier 1 and Tier 2 human health risk assessments for projects of varying sizes and complexities in California. The regulatory venues have included DTSC, the San Francisco Bay Area Regional Water Quality Control Board and the Los Angeles Regional Water Quality Control Board as well as local jurisdictions. Most of the projects have addressed potential risks from residual petroleum hydrocarbons, chlorinated solvents, arsenic and residual pesticides. Several of these projects have involved Chevron sites. Pathways of exposure considered in the risk assessments include vapor intrusion, and direct contact with soil and groundwater. Role: Project Oversight | Cost: Unknown | Dates involved: 09/2012-11/2018

TOXICOLOGICAL ASSESSMENTS

Health Effects of Metals in Ambient Particulate | Toxicology Assessment

Collaborated with scientists at Battelle to conduct a critical review of the health impacts of metals in ambient air particulate matter under Battelle's contract with the Mickey Leland National Urban Air Toxics Research Center. Additional funding to complete the research was provided to Stantec in a contract with the Nickel Producers Environmental Research Association. The manuscript is entitled, "Respiratory and Cardiovascular Effects of Metals in Ambient Particulate Matter: A Critical Review" by Deborah L. Gray, Lance A. Wallace, Marielle C. Brinkman, Stephanie S. Buehler, and Chris LaLonde. The manuscript was published in Reviews of Environmental Contamination and Toxicology in November 2014.

LITIGATION SUPPORT AND EXPERT TESTIMONY

Patrick, Price and Hartle et al. v. FirstEnergy: Civil Actions 2:08-CV-01019-JFC; 2:08-CV-01025-JFC; and 2:08-CV-01030-JFC in the United States District Court | Western District, Pennsylvania | Expert Testimony

Testified in deposition (February 22, 2013) as an evidence witness (non-retained expert) regarding previous involvement as an expert consultant to FirstEnergy in toxicology and public health regarding releases from the Bruce Mansfield generating plant in Shippingport, PA. The plaintiffs alleged health effects resulting from exposure to metals (arsenic and thallium) resulting from an airborne release of partially combusted coal ash from the Bruce Mansfield generating plant.

John Michael Abicht et al. v. Republic Services,Inc., et al: Case No. 2008 CT 10 0741 in the Court of Common Pleas | Tuscarawas County, Ohio | Expert Testimony

Testified in deposition (January 1, 2013) as a fact witness (non-retained expert) regarding ambient air sampling and evaluation of potential community exposures re: Countywide Landfill.

Tristan Tolloty v. Republic Services, et al (Stark County, Ohio Court of Common Pleas) | Expert Testimony

Deposition as fact witness (June 18, 2012) regarding ambient air sampling in the community surrounding Countywide Landfill.

Mike Phillips, Jonna Phillips, Scott Spencer, Cassie Spencer, Jared McMicken and Heather McMicken v. Chesapeake Appalachia, LLC., Chesapeake Energy Corporation and Nomac Drilling, Inc.: Civil Action No. 3:11-MC-126 in the United States District Court. | Expert Testimony

Provided expert testimony in deposition (June 8, 2012) on behalf of the defense regarding the human health implications of methane in well water.

City of Monroe, Ohio v. Korleski et al., ERAC Case No. 096438** | Expert Testimony

This case involved appealing the final air pollution permit to install issued for Middletown Coke Company. On behalf of the plaintiff (represented by VanKley and Walker) reviewed the conditions of the PTI and produced an Expert Report regarding the potential for increased risks for health effects amongst members of the nearby community related primarily to anticipated emissions of fine particulate from the coke plant. Testified in deposition August 2011.

On behalf of the plaintiff (represented by VanKley and Walker)** | Expert Testimony

Evaluated the potential health implications of airborne emissions of fine particulate matter and mercury that would be experienced by residents in close proximity to the location of a proposed Coking facility.

Conducted review of the pharmacology and toxicology of constituents in cigarette smoke in preparation for expert witness testimony in multiple cases originating the State of Florida. Testified in deposition October 2011.

City of Monroe, Ohio v. Chris Korleski, Director of Environmental Protection, Middletown Coke Company, and Suncoke Energy, Inc. and City of Monroe, Ohio v. Middletown Coke Company, Inc., et. al.** | Monroe, Ohio | Expert Testimony

On behalf of the plaintiff (represented by VanKley and Walker) evaluated the potential health implications of airborne emissions of fine particulate matter and mercury that would be experienced by residents in close proximity to the location of a proposed coking facility. Testified in deposition August 2009.

PJ & Associates v. Patel et al., In the United States District Court for the Northern District of Georgia, Atlanta Division, Civil Action File No. 1:15-CV-02861-AT | Expert Testimony

Dr. Gray has been retained as an expert consultant in toxicology & risk assessment on behalf of one of the defendants by Thompson Hine. This case involves the alleged release of dry cleaning solvent from the defendants' property onto the adjacent plaintiff property. Dr. Gray evaluated potential pathways of exposure (including vapor intrusion) and prepared an expert report and testified in deposition on November 18, 2016. She prepared a second expert report in a subsequent CERCLA claim in this case and testified in deposition in June 2017.

Confidential Client, Worker's Compensation Claim | West Virginia | Expert Consultant

Dr. Gray was retained as a consulting expert on behalf of the defendant in a worker's compensation claim in the State of West Virginia. The plaintiff (now deceased, claim being moved forward by the widow) claimed that the hepatocellular carcinoma that resulted in his death was caused by exposure to specific chemicals at the electrical generating plant where he was employed. Dr. Gray reviewed medical records, the opinions of medical specialists retained by the defense, depositions, MSDS sheets for chemical products (as provided by the plaintiff), and conducted independent research. She concluded that the plaintiff either had no exposure or insufficient exposure to chemicals in his job duties; and that occupational exposure was unrelated to his fatal cancer (2016).

Sue Pluck et al v. BP Oil Pipeline Company (US District Court Northern District of Ohio Eastern Division, Case No. 4:08CV-1545)** | Expert Testimony

Testified in deposition (April 2009) as an expert witness for the defense regarding plaintiff's claim that exposure to benzene in her well water was the cause of her non-Hodgkin's Lymphoma. Court granted the defendant's request for summary judgment.

Republic Services Inc. v. American International Specialty Lines Insurance Company (US District court Southern District of Florida, Case No. 8:07-21991-CIV-GOLD)** | Expert Testimony

Testified in deposition (January 15, 2009) as a fact witness regarding the ambient air monitoring that was conducted on behalf of Republic Services Countywide RDF.

Countywide Recycling and Disposal Facility* | Stark County, Ohio

Principal-in-Charge and public health toxicology expert (retained by Baker & Hostetler, outside counsel for Republic Services) in Stark County, Ohio. Dr. Gray designed and supervised the implementation of an ambient air monitoring program to evaluate exposures and potential risk associated with emissions from the landfill. The work performed by Dr. Gray and her staff assisted Countywide in complying with Ohio EPA Director's Findings & Orders (2006 to 2011).

Dr. Gray continues to provide expert services to Countywide through review of on-going ambient air monitoring data collected by another consultant (2013).

Citizens Against Pollution v. Ohio Power Company (US District Court of the Southern District of Ohio, Eastern Division, Case No 2:04-CV-00371)** | Ohio | Expert Testimony

Served as expert witness in toxicology and human health for the defense. Reviewed ambient air monitoring data for sulfuric acid potentially associated with ground-level emissions from the Ohio Power (AEP) Gavin Generating Plant, and evaluated potential exposures with respect to health effects alleged by the plaintiffs. Testified in deposition January 19, 2006. The case settled out of court.

Landfill Site Air Monitoring** | Confidential | Expert Testimony

Evaluated air monitoring data for hydrogen sulfide with respect to potential health effects in a community near a landfill (2005).

Janet Braglin v. Lempco Industries (Court of Common Pleas, Case No. 01-CV-00386** | Perry County, Ohio | Expert Testimony

Served as expert witness for the plaintiff in this wrongful death suit brought by the widow of the deceased. Plaintiff's widow was represented by Fuller & Henry, Ltd. Testified in deposition on August 20, 2002 and in Daubert Hearing in March 2005.

Janet Braglin, Widow-Claimant; Andrew Braglin, Decedent v. Administrator, Bureau of Workers' Compensation et al, Case No. 02-CV-0032** | Expert Testimony

Testified in deposition on June 6, 2003 as an expert witness for the plaintiffs.

United States of America v. Ohio Edison (Federal District Court, 2003-2004)** | Ohio | Expert Testimony

Served as expert consultant on toxicology (secondary sulfate and nitrate particles) for the defense (represented by Porter, Wright, Morris & Arthur) in this litigation under the Clean Air Act.

Porter, Wright, Morris & Arthur** | Expert Testimony

Provided consulting services on an as-needed basis to attorneys at the firm on a variety of workers' compensation claims and occupational exposure cases. Services have included review of medical records to establish biologically plausible associations between injuries and alleged toxic exposures, review and interpretation of the relevant literature, review and interpretation of drug test results related to workers' compensation claims, preparation of consultant reports and testimony in deposition and at trial.

Donald Bales (deceased) v. Printing Services Company and the Ohio Industrial Commission** | Expert Testimony

Served as an expert witness in toxicology for the defendants. Testified in deposition 2001.

Ohio Public Interest Research Group v. Laidlaw** | Franklin County, Ohio | Expert Testimony

Served as an expert witness for the defense in this citizen's action suit under the Clean Water Act. Worked with local attorneys at the firm of Crabbe, Brown, Jones, Potts & Schmidt and with the Boston office of Foley, Hoag and Eliot. Deposition testimony (1997) focused on the evaluation of water quality and sediment data with regards to ecosystem toxicity, and potential impacts of metals to biota in the receiving stream. The case settled out of court.

Rossmoor Community v. Morris Company et al** | New Jersey | Expert Testimony

Provided litigation support in epidemiology and toxicology to the defendants represented by Sterns & Weinroth. This case involved the proposed construction of an electronics warehouse on property immediately adjacent to a retirement community. The community opposed the project based on allegations that the increased particulate emissions from truck traffic associated with the warehouse would negatively impact the health of the residents. Worked with air modeling expert to determine the probable nature of the exposures and implications to the health of the Rossmoor Community residents. This case settled during the early stages of the trial.

Handwell Company Third Party Cost Recovery Under CERCLA** | Columbus, OH | Expert Testimony

Provided support of the plaintiff Handwell Company in seeking relief from the former owners and operators of a small industrial property in Columbus for the anticipated cleanup of soil contaminated with lead, nickel, and chromium. Evaluated risk-based cleanup goals for the property and provided testimony in deposition 1995.

Peterman v. HARSCO** | Union County, OH | Expert Testimony

In this case, former employees of HARSCO alleged injury from exposure to the components of a paint formulation in the workplace. Worked with attorneys at Porter, Wright, Morris & Arthur to research the components of the paint, review the plaintiffs' medical records and relevant toxicology literature. Prepared exhibits and testified at trial 1994 on behalf of the defense. Jury found in favor of the defense.

Waterman v. Taylorville Sanitary District et. al.** | Christian County, Illinois | Expert Testimony

The plaintiffs' alleged damages to their health and property as a result of the application of municipal sewage sludge to an adjacent agricultural property. Provided deposition testimony (1993) on behalf of the defendants. The case settled out of court.

Marie DeSario and John Andeozzi et al v. Industrial Excess Landfill et al** | Stark County, Ohio | Expert Testimony

Worked with attorneys at Squire, Sanders & Dempsey to refute the illogical delineation of the class boundaries claimed by the plaintiffs. Provided litigation support and expert testimony at trial 1993.

Mildred Griffith et al v. Industrial Excess Landfill et al** | Stark County, Ohio | Expert Testimony

Worked with attorneys at Square, Sanders & Dempsey to evaluate the potential exposures and health effects that may have been experienced by the plaintiffs. Reviewed plaintiffs' medical records and provided testimony in deposition (1991). The case settled before going to trial.

United States of America v. Marine Shale Processors, Inc.** | Lafayette, Louisiana | Expert Testimony

Worked with attorneys from the U.S. Department of Justice (U.S. DOJ) and U.S. EPA to develop court exhibits from environmental monitoring data. Testified as an evidence witness in a pre-adjudicatory hearing 1991.

State of Ohio v. Steel Processing Services et al** | Jefferson County, Ohio | Expert Testimony

Worked with attorneys Porter, Wright, Morris & Arthur to refute allegations that fiberglass released from the defendant's rail car salvage operation caused an outbreak of (dermatitis) ailments in two nearby schools. Testified at bench trial 1990.

Confidential Client | OH

Dr. Gray was retained as a consulting expert in toxicology by the outside legal counsel for a steel manufacturer in Ohio (2013-2015).

Shook, Hardy & Bacon, LLP | Florida | Expert Testimony

Dr. Gray was retained as an expert in human health toxicology by Shook, Hardy & Bacon, LLP (outside legal counsel representing a major cigarette manufacturer). She conducted an independent review of the pharmacology and toxicology of constituents in cigarette smoke in preparation for expert witness testimony in multiple cases originating in the State of Florida. Testified in deposition October 2011.

State of Missouri v. Republic Services/Bridgeton Landfill | Bridgeton, MO

Dr. Gray has been retained as an expert in toxicology/public health by Lathrop & Gage, LLP, the outside legal counsel for Republic Services/Bridgeton Landfill, LLC.

EXPOSURE ASSESSMENT

Proposed Municipal Solid Waste Landfill** | Marana, AZ | 2010 | Risk Communication

Dr. Gray evaluated the potential for members of the surrounding community for exposure to waste constituents from the landfill and addressed community concerns about health effects such as cancer and birth defects in a public hearing before the Marana Town Council.

River Valley Local Schools** | Marion County, Ohio | 1998-2013 | Technical Advisor

River Valley High and Middle Schools were located on a contaminated property previously used by the Department of Defense. A higher than expected rate of leukemia was documented amongst River Valley graduates and the population of Marion. Dr. Gray evaluated the potential for exposure to toxic chemicals on the school campus, the etiology and risk factors for thedifferent types of leukemias reported. Participated in various public and private meetings and provided real-time advice to the school administration regarding management of perceived and actual risks to students and staff (1998-2003).

Dana Corporation** | Bellefontaine, Ohio | 2002-2003 | Risk Communication

Dr. Gray assisted Dana Corporation with an intensive risk communication effort involving the neighborhood surrounding the Dana Glacier-Daido plant in Bellefontaine, Ohio. Prior to Dana's recent acquisition, historical activities at this metal working plant released lead dust into the surrounding neighborhood, contaminating soil in residential yards.

Ohio Department of Health* (ODOH)* | Ohio | 1985 - 1990

Dr. Gray and her staff provided expertise in toxicology and environmental epidemiology to local health departments and to Ohio EPA on a wide variety of issues including the development of fish consumption advisories, suspected exposures to toxic substances in the ambient environment and in the workplace, and health effects and epidemiology investigations at Ohio NPL sites (1985-1990).

Ohio University Industrial Hygiene Program | 2008-2010 | Advisory Committee

SPILL RESPONSE

FirstEnergy Bruce Mansfield Plant Coal Ash Releases | Shippingport, PA

Dr. Gray assisted FirstEnergy in evaluating pathways of exposure and potential health effects from an accidental release of partially combusted coal ash from the company's Bruce Mansfield Plant. Dr. Gray prepared a written report, met with Pennsylvania regulators and participated in two community meetings.

Community Emergency Response Training for Public Health Students* | OH

Dr. Gray coordinated and helped to develop a practice-based training course for public health students at The Ohio State University (2002-2004).

Refugio Incident | Gaviota, CA | 2015

Dr. Gray is a member of the support team evaluating pathways of exposure for human and ecological receptors following a crude oil pipeline release along the California coast in May 2015 (ongoing in 2015).

Drovdal 18/19 Well Release Incident | Watford City, ND

Dr. Gray was a member of the Stantec team responding to an accidental petroleum release from a well under development in North Dakota. The release occurred immediately prior to Christmas in 2012 and the response continued through the winter months. Dr. Gray's role was to provide real-time consultation regarding potential community exposures during the incident and to evaluate potential exposures from residual petroleum hydrocarbons.

Miamisburg Hazardous Materials Train Wreck* | Miamisburg, OH

Deborah Gray represented the Ohio Department of Health (ODH) in responding to a phosphorous fire initiated by a train derailment near the City of Miamisburg OH in July 1986. Her role was to be present on-scene and provide real-time consultation to the local primary responders regarding likely exposures and the need for evacuation of community residents. Dr. Gray and her colleagues with the ODH also conducted surveys and evaluation of the community in the months following the incident.

Production Water/Brine Release | Williston, ND

Dr. Gray provided real-time consultation and assistance in evaluating potential human health implications from the release of oil field production water with a high brine content into Blacktail Creek, Little Muddy River and the Missouri River in Williston, ND (January-February 2015).

Exhibit 6

1846 Berkshire Lane, Plymouth, MN 55441

(763) 577-0102 • FAX: (763) 577-3799 • www.glacier-technology.com

Water Gremlin
4400 Otter Lake Road
White Bear Township, MN 55110

August 18, 2022

Bradley Hartsell,

This letter is in response to your questions on monitoring and replacement of the Nederman air filters in your facility. The Nederman collectors operate with the highest filter efficiency in the industry.

Each of the Nederman collectors at your facility operates with 3-stage filtration. Two firberbed filters and one HEPA final filter. The Nederman collectors are equipped with individual pressure monitoring gauges for each filter. When the filters are new, the gauges are in the green zone. As the filters load, the gauges will start moving up ... eventually into the red zone. When a gauge reaches the red zone, it is time to consider changing the affected filter. This does not mean you need to change all three filters.

Our recommendation for operating and maintaining the collectors is to follow the O&M manual and change out a filter when it reaches the red zone on the filter gauge. We do not recommend opening the collector, pulling the filters and inspecting them daily, as this provides no useful information, and risks filter damage.

Let me know any questions regarding the information provided.

Sincerely,

Tom Eastlack
Glacier Technology Inc.

Tom Eastlack tom@glacier-technology.com 763-443-6901

MARK R. KASTER
Partner
(612) 340-7815
FAX (952) 516-5607
kaster.mark@dorsey.com

August 19, 2022

VIA ELECTRONIC FILING and
VIA MESSENGER

Mr. Jacobe Timler, Permit Engineer
Minnesota Pollution Control Agency
Industrial Division
520 Lafayette Road North
Saint Paul, Minnesota 55155-4194
Jacobe.Timler@state.mn.us

Re: Water Gremlin Comments on Preliminary Draft Air Emission Permit No. 12300341-101

Dear Mr. Timler:

We write on behalf of our client Water Gremlin Company ("Water Gremlin" or the "Company") to provide comments on the Preliminary Draft Air Emission Permit No. 12300341-101, dated July 20, 2022 ("Draft Permit"). While the Company appreciates the agency's willingness to meet regularly with Company personnel on the Draft Permit, there remain significant unresolved factual, scientific and legal issues with the Draft Permit, as outlined in this comment letter and the attachments hereto. In particular, the Company believes that the facility limit for solvent use proposed in the Draft Permit is based on an improperly derived health benchmark and a series of compounding safety factors that are not based in fact, law, or promulgated rule and are not tied to any identified risks to the community surrounding the Water Gremlin facility. The result is a deeply flawed Draft Permit that will materially impact Water Gremlin's ability to meet demand for its essential products, which are critical for automotive, telecommunications, aviation, and military applications.[1] As a result, in addition to these comments, the Company is submitting today a Petition for a Contested Case Hearing ("Petition") regarding certain factual bases for the Draft Permit. Water Gremlin's Petition is attached as **Exhibit 1**.

Water Gremlin is committed to providing a safe and healthy environment for our employees, neighbors, and the broader community, and understands that the MPCA's mission and statutory authority aligns with those goals. In that spirit, Water Gremlin is working to transition to ultraviolet ("UV") based coating machines as part of its Gremlin Green

[1] The Company supplies products for consumers, commercial and industrial applications, government operations and military uses. The arbitrary limitations placed on the Company's operations via a permit premised on unfounded factual assumptions and unpromulgated rules and standards will significantly constrain production and could result in disruptions to critical supplies.

environmental program, which reduces the use of industrial solvents in the facility. Water Gremlin has proposed to invest heavily (capital costs of over $3 million dollars) in UV-based coating machines that would significantly reduce the use of solvents in its operations over the course of the five-year permit term. This transition would require a slightly higher allowance of emissions in the initial two years (during construction of the UV coaters) than what was proposed in the Draft Permit (but still below the Minnesota Department of Health's health benchmark), followed by a steep drop-off of solvent use, such that the overall emissions over the five-year permit term would be ***lower*** than what is allowed under the Draft Permit.

Unfortunately, the MPCA rejected this proposal and insists on imposing permit conditions and limitations that do not have a basis in fact or law. Indeed, the MPCA has said publicly that it is seeking to impose the strictest permit allowable under law. But, in their eagerness to restrict Water Gremlin's operations, the MPCA went too far – as described in this letter and the attached Petition.

The remainder of this letter and the attached exhibits provide a more detailed discussion of Water Gremlin's comments on the Draft Permit.

I. Comments on the Draft Permit

As a threshold matter, Water Gremlin notes that the Draft Permit expressly acknowledges but does *not* terminate the March 1, 2019 Stipulation Agreement signed by Water Gremlin and the MPCA ("Stipulation Agreement") and the unilateral January 17, 2020 Administrative Order issued by the MPCA ("Administrative Order"). The Stipulation Agreement and Administrative Order were put in place to provide interim regulatory requirements applicable to the Company while its application for a new facility air permit was pending. The Company has fully complied with the Stipulation Agreement and Administrative Order, including monitoring requirements and collection of data at a cost of over one million five hundred thousand dollars ($1,500,000) per year.

The MPCA's technical support document ("TSD") accompanying the Draft Permit acknowledges that all actions required by the Administrative Order to resume coating operations have been completed by the Company. Similarly, the TSD notes that Water Gremlin was required to complete all requirements of the Stipulation Agreement prior to issuance of the Draft Permit. Because Water Gremlin has either already met or will meet all of the agency's requirements upon issuance of the permit, and because there are conflicting requirements set forth in the Stipulation Agreement and Administrative Order with the terms of the Draft Permit, the Stipulation Agreement and Administrative Order must terminate upon issuance of the final permit.[2]

[2] We note that the Stipulation Agreement and Administrative Order impermissibly failed to include any termination provisions, and since Water Gremlin has complied with and completed all of the required response actions, Water Gremlin is requesting termination of these documents.

The remainder of this comment letter discusses the flawed TDCE limit incorporated in the Draft Permit, the ongoing monitoring requirements that Water Gremlin believes do not provide any additional regulatory or health benefit, and additional comments as enumerated on the comments to the Draft Permit and TSD, which are attached as **Exhibits 2- 4** herein.

A. Proposed Facility TDCE Limit

1. Background

As part of an environmental audit that the Company undertook and discussions with the MPCA, the Minnesota Technical Assistance Program at the University of Minnesota ("MNTAP"), and other resources, the Company voluntarily eliminated the use of trichloroethylene ("TCE") in its facility in January 2019 and replaced it with the recommended substitute *trans*-1,2-Dichloroethylene ("TDCE"). TDCE was recommended by MPCA and MNTAP as a safe and effective replacement for TCE. Pursuant to the Stipulation Agreement, Water Gremlin transitioned from using TCE to using the FluoSolv WS solvent, which uses TDCE as its main ingredient. TDCE is not classified as a hazardous air pollutant ("HAP") under the Clean Air Act and is far less toxic than TCE.[3]

At the time of the Stipulation Agreement, the MPCA imposed a facility-wide limit on the use of FluoSolv of 0.90 tons per calendar day, calculated as a 24-hour sum, with a 90 ton per year ("tpy") annual limit. The 0.90 tons per day limit was calculated by the MPCA based on Minnesota Department of Health ("MDH") Risk Assessment Advice ("RAA"), in which MDH determined a chronic RAA value for TDCE of 70 micrograms per cubic meter ("µg/m^3"). This value was based on an ingestion-to-inhalation ("route to route" or "RTR") extrapolation from the United States Environmental Protection Agency's ("USEPA") chronic oral reference dose for TDCE of 0.02 mg/kg-day, which was published on the USEPA's Integrated Risk Information System ("IRIS") webpage.

In May 2020, MDH published an updated RAA for TDCE with a sub-chronic inhalation health benchmark of 200 µg/m^3 and a chronic inhalation benchmark of 20 µg/m^3. The updated RAA was again based on route-to-route extrapolation using a chronic oral (not inhalation) reference dose of 0.005 mg/kg-day, taken from a 2018 assessment of oral toxicity by the California Environmental Protection Agency's Office of Environmental Health Hazard Assessment ("CalEPA") and incorrectly and improperly incorporated into the RAA.

Based on this updated MDH RAA, the first draft permit shared by MPCA with Water Gremlin, dated June 7, 2021, included a limitation on TDCE emissions of 35 tpy, using a 365-day rolling sum, to be calculated each operating day for the prior 365-day period. Subsequently, an updated draft permit provided by MPCA, dated July 29, 2021, included a limit on TDCE emissions of 40 tpy, calculated on the same rolling 365-day basis. The next two permit drafts

[3] *See, e.g.,* TDCE safety profile information such as that from 3M. 3M, "t-DCE: A safe, sustainable component in 3M Novec cleaning solutions," (June 2021), https://multimedia.3m.com/mws/media/811521O/trans-dce-trans-dichloroethylene.pdf. According to 3M, the safety profile of TDCE has been well characterized over the past 25 years.

reverted back to the 35 tpy level from the original draft permit. As discussed below, the Draft Permit now includes a limit on TDCE emissions of 32.6 tpy.

A detailed Technical Memorandum commenting on the MDH and MPCA risk assessment methodologies was prepared and submitted to the MPCA on April 22, 2022. This Technical Memorandum and a supplement thereto are attached herein as **Exhibit 5**. For the reasons set forth in the Technical Memorandum, Water Gremlin objects to the application of a 32.6 tpy limit in the Draft Permit, and the analysis regarding the risk assessment, risk factors and safety margins used to derive the limit.

The MPCA's risk assessment analysis has been arbitrarily applied to only the Water Gremlin facility. There is no basis in fact, science or the law for the TDCE limit being imposed by the MPCA. It is not based on any promulgated rule or standard, it is unsupported by substantial evidence, it is foundationally inaccurate (based on extrapolation of oral data), it is inaccurate in application (chronic vs sub-chronic) and inconsistent with the agency's own risk assessment guidance.

2. TDCE Limit in the Draft Permit

The proposed facility TDCE usage limit of 32.6 tpy in the Draft Permit was determined by applying the MDH's RAA chronic health benchmark for TDCE of 20 µg/m^3. MPCA further adjusted the emission rate downward in Water Gremlin's Screening Risk Assessment Spreadsheet ("RASS") so that the final endpoint-refined hazard index for TDCE calculates specifically to 1.0 (one significant digit), rather than rounding index readings between 1.49 and 1.00 to 1 as provided in MPCA practice. The MPCA then added an additional 16 percent safety factor to the TDCE emissions limit based on the current usage of TDCE at the facility, on the rationale that ambient air monitoring on site indicated that air dispersion modeling was allegedly under-predicting actual ambient air concentrations.

The Company believes there is no basis in fact, science or the law for the facility TDCE limit of 32.6 tpy proposed by the MPCA in the Draft Permit. Most significantly, Water Gremlin has repeatedly raised concerns about the MDH RAA for TDCE and MPCA's reliance upon it. Even though the RAA was reportedly developed to be a standard of general application, the RAA has not been promulgated into state rule. It is unsupported by any substantial evidence, it is foundationally inaccurate due to being based on MDH's improper extrapolation of oral exposure data, it is inaccurate in application of a chronic health benchmark rather than a sub-chronic, and it is inconsistent with the agency's own risk assessment guidance. These issues are discussed in turn, below.

(a) MDH RAA Health Benchmark

As noted above, the MDH RAA for Water Gremlin, which resulted in a sub-chronic inhalation health benchmark of 200 µg/m^3 and a chronic inhalation benchmark of 20 µg/m^3, was based on a RTR extrapolation of an oral reference dose to an air concentration. Attached to this letter as **Exhibit 5** are a Technical Memorandum and supplement from Dr. Deborah Gray, an

independent toxicologist at Stantec, who has significant experience in toxicology, risk assessments, and in particular TDCE. Dr. Gray describes the many reasons why the MDH RAA does not provide a reliable basis on which to derive a permit limit for TDCE, including the inherent unreliability of RTR extrapolation, the lack of transparency, and the lack of peer review of the MDH's in-house route-to-route extrapolation.

In a memorandum provided as an attachment to the TSD, MDH "acknowledges the limitations associated with RTR extrapolation."[4] MDH guidance further recognizes that sufficient toxicokinetic information must be available to support any attempted RTR extrapolation,[5] but did not provide or cite to any of the necessary documents or other resources regarding the protocols for performing RTR extrapolation. Because it is extremely difficult to perform it reliably, USEPA very seldom engages in RTR extrapolation. **The uncertainties associated with RTR extrapolation are often at least as great as the uncertainties, and magnify any limitations associated with, the underlying study on which the extrapolation is based**.

Furthermore, there was no reason for MDH to rely on an oral-to-inhalation RTR extrapolation because in September 2020, EPA established Provisional Peer-Reviewed Toxicity Values ("PPRTV") for TDCE through the inhalation route of exposure. The PPRTV identifies chronic and sub-chronic *inhalation* reference concentrations for TDCE of 40 and 400 µg/m^3, respectively, based on USEPA's review of inhalation toxicity studies and the agency's risk evaluation protocols. Based on this reference concentration, the USEPA published a Regional Screening Level ("RSL") for residential air of 42 µg/m^3 for TDCE. The residential RSL reflects a risk evaluation that includes sensitive populations.

As described further by Dr. Gray in **Exhibit 5**, the MDH's stated rationales for rejecting the PPRTV in favor of a site-specific RAA derived through RTR extrapolation are unfounded. In publishing the PPRTV, the USEPA concluded that the key inhalation study on which it was based was reliable. In any case, the USEPA's value is far more reliable than the MDH's RAA value derived in a closed-door RTR extrapolation, which, in addition to being inherently unreliable, was not peer-reviewed and does not appear to have followed established protocols. RTR extrapolation of an inhalation benchmark is inappropriate both on its own terms and especially given the existence of peer-reviewed inhalation studies and the USEPA's published PPRTV. The reference concentration and RSL for TDCE in residential air in the PPRTV were derived based on the available peer-reviewed inhalation studies of TDCE exposure. As a result, this is a far more reliable measure of inhalation risk than the MDH's RAA and is the only proper scientific and factual basis on which to set the TDCE limit in the Draft Permit.

[4] See, TSD, Minnesota Department of Health Memo from James Kelly to Kari Palmer dated July 13, 2022, at 5.

[5] Minnesota Department of Health, "Statement of Need and Reasonableness, proposed Permanent Rules Relating to Health Risk Values," at 10-11 (August 2001).

(b) Chronic vs. Sub-Chronic Benchmark

Separately from the oral versus inhalation issue, the 20 µg/m^3 RAA value used to form the basis of the TDCE limit in the Draft Permit is the MDH's *chronic* health benchmark for TDCE. As noted in the TSD and MDH guidance, the MDH defines chronic (long term) exposure as over a period of 10 percent of a lifespan, or approximately 8 years, while a sub-chronic exposure is anywhere from 30 days up to approximately 8 years.[6] According to the TSD, the MPCA's rationale for utilizing the chronic exposure benchmark in the RASS is that the chronic RAA "matches planned facility operation" because "the permit will be issued for Water Gremlin to operate into the future." The term of the Draft Permit is only 5 years and per the terms of the Draft Permit, it is subject to re-review, revised modeling and assessment upon renewal. Therefore, it is not possible for any individual to have a "chronic" (i.e., more than 8 years) exposure to TDCE during the term of the permit. Further, the MPCA does not allege that *any* residents in the area surrounding Water Gremlin's facility will have sustained chronic exposure to TDCE. The EPA's RSL for TDCE discussed above is based on an assumption of 24-hour exposure, for 350 days per year, for 26 years. This duration of exposure is not possible during the five-year term of the Draft Permit. Furthermore, the ambient air monitoring data collected by Water Gremlin for the last three years demonstrates that no off-site person will ever be continuously exposed, or even consistently exposed, to emissions from the Water Gremlin facility, if for no other reason, because of the variabilities of wind transport.

The TSD also notes that MPCA utilized the chronic health benchmark "in consideration to [sic] the extended prior unpermitted exposures of this community."[7] The Draft Permit and the supporting documents do not, however, allege (1) any prior unpermitted emissions of TDCE, or (2) any connection between historic TCE emissions and future TDCE emissions. In fact, the MDH admits that there is no known cumulative interaction between TDCE and prior TCE exposure, and toxicokinetically, there is no reason to believe that any effects of TDCE are cumulative of those with prior TCE exposure, because both TCE and TDCE are quickly eliminated from the body and do not bioaccumulate.

For these reasons, Water Gremlin believes that it is more appropriate to use the sub-chronic benchmark for TDCE, based on the USEPA's RSL as described above.

(c) Rounding of Endpoint Hazard Index

Water Gremlin objects to the MPCA's adjustment of the facility emission rate downward in Water Gremlin's Screening RASS so that the final endpoint-refined hazard index for TDCE calculates specifically to 1.00. In addition to evaluating individual emissions, the MPCA routinely calculates a facility-wide hazard index through the RASS, in which it assigns values to the

---

[6] Minnesota Department of Health, "Air Exposure Durations," (April 2020), https://www.health.state.mn.us/communities/environment/risk/docs/guidance/air/airdurations.pdf..

[7] TSD at 41.

hazards associated with each pollutant emitted to derive a total numeric value for the facility. This becomes the "Facility-wide Endpoint Hazard Index for the Facility," and can result in adjustments to emissions limits over-and-above those that would be allowed on a pollutant-by-pollutant basis. Minnesota Rule 4717.8600 describes the procedure for calculating a facility's hazard index. Subpart 2(D) states: "A hazard index of one or less indicates a combined concentration of chemicals unlikely to cause an adverse health effect to the general public." Because this is an inherently crude and overprotective exercise, the MPCA's normal process is to calculate to one significant digit. In practice, values between 1.01 and 1.49 round to 1, and values between 1.51 and 1.99 round up to 2. Water Gremlin's facility-wide endpoint hazard index, even using MDH's RAA, would round to 1, and at that level Water Gremlin's emissions limits would require no further adjustment. Under this calculation, Water Gremlin's facility-wide emissions limit for TDCE would have been 51.2 tpy.

MPCA departed from this practice in the case of Water Gremlin. MPCA refused to allow any rounding for a facility-wide Hazard Index, and furthermore applied a TDCE-specific endpoint hazard index of 1.0 (no rounding).[8] As a result, Water Gremlin's TDCE emissions limit was lowered to 38.7 tpy. MPCA's justification for this departure from its normal practice is that ambient monitoring at the Water Gremlin facility allegedly showed that the modeling was under-predicting air concentrations. This is incorrect. In fact, as discussed further below, Water Gremlin's ambient monitoring shows that TDCE concentrations (365-day rolling averages) have been consistently below the unpromulgated RAA level of 20 µg/m^3 for the past two years of monitoring.[9]

(d) Additional 16 Percent Safety Factor

After adjusting the RASS to reflect its rounding and TDCE-specific Endpoint Hazard Index decisions imposed on Water Gremlin, MPCA made a further reduction to its proposed TDCE limit, in an apparent attempt to calibrate the limit derived from its risk modeling procedure above (38.7 tpy) further downward by using the ambient monitoring data that had been generated over the prior two-plus years. That is, the ambient monitoring data showed a brief period (between approximately November 9, 2021 and January 8, 2022) wherein the 365-day

[8] TSD at 43.

[9] Despite a brief period where the 365-day rolling average for a single monitor (the agency does not use readings from all of the monitors) was calculated to be above 20.0 µg/m^3, the current individual 365-day rolling average is well below that level (14 µg/m^3 Monitor 2, period ending August 12, 2022). The other four monitors are all currently less than 10 µg/m^3 on a 365-day rolling average basis. Monitor 4 is typically the highest of the five monitors and its 365-day rolling average has been below 20 µg/m^3 since December 29, 2021. Notwithstanding the above noted results, the 365-day rolling average is not an appropriate time duration to compare against a chronic toxicity value. Note also that the monitor results likely reflect emissions from entities other than Water Gremlin. For example, the ambient monitoring detected TCE in air on several occasions after Water Gremlin discontinued its use and removed all TCE from its property, and a forensic analysis concluded that the TCE detections would not have been sourced from Water Gremlin. There are likely numerous other sources of chlorinated compounds in the area, but the MPCA attributes all monitored emissions (erroneously) to Water Gremlin. *See, e.g.,* Hazardous Waste licensees in the area in MPCA's 'What's In My Neighborhood' tool at: https://mpca.maps.arcgis.com/apps/webappviewer/index.html?id=9d45793c75644e05bac197525f633f87.

rolling mean TDCE concentration was in excess of MDH's RAA of 20 µg/m^3. MPCA paired the 365-day rolling VOC tracking required by the Administrative Order with this data and determined that the 365-day rolling emissions total, when the ambient monitors demonstrated a 365-day mean concentration above 20 µg/m^3 (November 9, 2021), was approximately 32.6 tpy VOCs (as of November 6, 2021). MPCA used this pairing to arrive at its adjusted TDCE limit of 32.6 tpy, citing the approximate 16 percent reduction (i.e., from 38.7 tpy to 32.6 tpy) as "appropriate based on the weight of the evidence provided by actual ambient air measured concentrations of t-DCE around the facility and the associated t-DCE usage at the facility." Water Gremlin has several objections to this adjustment.

The method used by MPCA is wholly arbitrary and amounts to an indefensible leap. There is no linear relationship or direct connection between TDCE usage (tons per year) and ambient concentration (micrograms per cubic meter). While partially dependent on emission levels, the concentrations observed at any one ambient monitor location or point in time are also a function of wind speed and direction for the time-period of interest. The inability to scale stack emissions directly to ambient concentrations is why risk modeling is normally conducted using a USEPA-approved dispersion model coupled with five years of National Weather Service hourly weather observations. The variability in weather patterns possible for a given area are deemed to be sufficiently represented by five years of representative hourly weather data. Using such data under MPCA's typical risk modeling procedures, the maximum calendar year average result for any one receptor in the grid (among hundreds or thousands) is then used as a surrogate for maximum exposure and limits are set on this basis.

MPCA's adjustment method is further cast into question due to other occasions whereby 365-day VOC usage levels in excess of 32.6 tpy resulted in 365-day rolling concentrations well below 20 µg/m^3 (e.g., Summer 2021, Summer 2022). Using MPCA's pairing method, one could infer that higher usage levels could be supported at different times of the year. This is not being proposed by Water Gremlin; instead, it simply shows that MPCA's arbitrary selection of one monitoring event to set an annual limit is not defensible.

MPCA states that it "must be noted that there are no other known sources of t-DCE around the Water Gremlin facility other than Water Gremlin itself." While none are known of, this does not negate the possibility that such sources exist in the area. For example, reviewing MPCA's 'What's In My Neighborhood' tool, various hazardous waste licensees are located in the region. It is certainly plausible that such businesses ceased usage of TCE under Minnesota's ban and found TDCE as an acceptable alternative based on prior guidance by MNTAP to businesses, in exactly the same manner as occurred with Water Gremlin. The MPCA's presumption that there are no other sources is therefore unsound.

3. Compounding Safety Factors Included in Proposed TDCE Limit

Water Gremlin believes it is important, in order to put these comments and the Company's TDCE emissions in context, to describe the many compounding safety factors that are incorporated the risk assessment process.

First, the USEPA's chronic oral reference dose for TDCE of 0.02 mg/kg-day includes an adjustment of the dose downward by the application of uncertainty factors to account for limitations in the database such as: inferring the effects of chronic exposure from a subchronic study; animal study to humans; variability and sensitivity of the human population; and number and quality of available studies. As a result, the USEPA's chronic oral reference dose of 0.02 mg/kg-day is **3,000 times LOWER** than the lowest exposure levels that produced a response in the experimental animals.

Second, in developing its RAA, the MDH did not use the 0.02 mg/kg-day oral reference dose from USEPA IRIS, but instead used a reference dose of 0.005 mg/kg-day, based on guidance from CalEPA. This is 4 times lower than the USEPA IRIS value.

Third, in the RAA, MDH relied on RTR extrapolation of oral to inhalation data, when EPA had already published a risk assessment not premised on RTR extrapolation. It isn't even clear that the agency considered the USEPA risk assessment data until Water Gremlin pointed it out in April of 2022.[10]

Fourth, the MPCA applied a chronic health benchmark value, which incorporates a safety factor of 10 times below the sub-chronic value.

Fifth, MPCA did not allow rounding of the Endpoint Hazard Index in the RASS, per past practice. This resulted in an additional 24 percent reduction in the overall facility TDCE limit (51.2 tpy to 38.7 tpy).

Sixth, the MPCA applied an additional 16 percent safety factor as described above.

In sum, under the agency's application, there is no objective probability of risk. Rather, there is simply and unfounded additive compounding of safety factors at all stages of the analysis, resulting in an overstated risk and unreasonable and unsupported limitations on the Water Gremlin operations.[11]

---

[10] The MDH RAA and MPCA risk assessment documentation was devoid of any discussion of the EPA's 2020 PPRTV, even though they try to backfill this gap in the MDH internal memo of July 13, 2022 provided as an attachment to the TSD. At best, this was agency oversight. We request that all records, notes, memoranda, e-mails, and other documentation in the files of the MPCA and MDH regarding the RAA and RASS be included in the permit record. This would include, but is not limited to, written or documentation oral communications, e-mails or other correspondence between MDH and/or MPCA and any other federal, state or local governmental agency or institution regarding the risk assessment for TDCE.

[11] While safety factors are used in the development of a regulatory threshold that are protective of health, they must be grounded in proper rulemaking and procedure involving all stakeholders. The use of large and arbitrary safety factors must be avoided. Otherwise, the result is an extrapolation that drives the risk threshold to overly protective threshold values devoid of any rational basis.

B. Monitoring Requirements

The Draft Permit imposes three levels of emissions monitoring for TDCE: (1) modeling inventory tracking and management of TDCE, (2) in-stack monitoring, and (3) ambient monitoring. In general, the MPCA's stated rationale for the ongoing monitoring requirements is that the facility is operating at or near the 20 µg/m^3 TDCE limit proposed in the Draft Permit, therefore additional monitoring is required to ensure there are no exceedances in the future. This rationale is not valid. The in-stack and ambient monitoring requirements are not required or necessary to demonstrate compliance. The Company has agreed to the MPCA's recommended gold standard of detailed inventory tracking and traceability of TDCE usage.

The in-stack monitoring serves no legitimate purpose, particularly in light of the high cost of this type of monitoring. Rather than accurately monitoring TDCE emissions, the in-stack continuous emissions monitoring system ("CEMS") measures total hydrocarbons, and attributes *any* molecules containing carbon toward a concentration as TDCE emitted. For this reason, the CEMS frequently overstates TDCE emissions.

By contrast, inventory tracking and management results in clear monitoring and record keeping of actual TDCE use and emissions, and is a standard compliance mechanism under the Clean Air Act.

The Draft Permit contains provisions for discontinuation of ambient VOC monitoring at Permit Item 5.1.57. However, this provision is unworkable for several reasons. First, the facility must continue ambient monitoring for at least 24 additional months once the permit is issued. Water Gremlin requested credit for having collected identical data for more than two years leading up to the Draft Permit term, but the agency denied this request. Second, in order to discontinue the ambient monitoring, Water Gremlin must be operating with TDCE emissions at least 80 percent of the permitted limit. It is counterintuitive and counterproductive to require a high level of solvent usage be maintained in order to discontinue ambient monitoring, when Water Gremlin has already proffered a schedule of TDCE emissions that would result in less TDCE emitted than under the Draft Permit. In the same vein, this requirement runs counter to Water Gremlin's stated intention and proposed authority under the Draft Permit to convert additional solvent-based coaters to UV-cured coaters, which have no TDCE emissions.

The ongoing monitoring requirements in the Draft Permit will create a compliance burden and significant added costs, with no additional benefit in terms of human health or agency oversight. We note that the original justification for in-stack VOC monitoring was due to concerns over TCE usage at Water Gremlin's facility. As noted above, Water Gremlin stopped using TCE more than three years ago. The facility has strict daily VOC reporting requirements tracked within production, which are used to model emissions consistent with MPCA and USEPA practice. This is the most reliable and traceable compliance monitoring point for all parties. In-stack monitoring does not provide specific emissions data usable for modeling or risk assessment purposes — the results are an inaccurate (total hydrocarbon) surrogate for TDCE emissions because all hydrocarbons within the stack are reported as TDCE, even those that are not TDCE.

Given the inherent unreliability, the other oversight and superior monitoring measures included in the Draft Permit, and the gap between actual emissions and the TDCE limit once the PPRTV and RSL are applied, there is no added benefit of in-stack or ambient monitoring and these requirements should be eliminated.[12]

C. Comments on Specific Provisions of the Preliminary Draft Permit and TSD

Water Gremlin has reviewed the Preliminary Draft Permit and TSD in detail and provides its additional comments in the attached **Exhibits 2-4**. We also incorporate by reference as part of the record in this matter Water Gremlin's prior comments and exhibits submitted to the MPCA on April 22, 2022. Additionally, Water Gremlin has been meeting with MPCA staff, at times on a weekly basis, and the summary notes, records, modeling data, communications and correspondence with the agency are incorporated herein by reference.

Water Gremlin notified the MPCA on August 4, 2022 about a small, existing wet cooling tower at Water Gremlin's South campus that was inadvertently missed in prior submittals. As discussed between MPCA and Stantec, this unit has been incorporated into the particulate modeling files and affected permit forms. Stantec will be submitting these items to the agency under separate cover today, August 19, 2022.

II. Water Gremlin Alternative TDCE Proposal

In discussions with the MPCA regarding the pre-publication version of the Draft Permit, and now again in these filed comments, Water Gremlin has proposed an alternative, enforceable, declining emissions schedule, that would result in a **net reduction** in emissions of TDCE over the five-year term of the permit and a permanent reduction should Water Gremlin seek to renew the permit. Water Gremlin's proffered emissions schedule was structured to provide for emissions of 38.7 tpy in year one of the permit (consistent with the MDH RAA guidance), and 36.5 tpy in years two and three of the permit, followed by reduced emissions of 19.4 tpy in years 4 and 5, which is well below the proposed limit in the Draft Permit. This proposal was specifically intended to facilitate Water Gremlin's transition to UV-based coating machines as part of its "Gremlin Green" environmental program, thereby **reducing** TDCE consumption well below even the erroneous risk levels used to establish the Draft Permit limits. The MPCA rejected this proposal, without a factual basis. Water Gremlin renews this requested adjustment to the permit limit for all of the reasons set forth in these comments, and in the Petition.

---

[12] As a further example of the MPCA's overreach on monitoring, the Draft Permit requires daily checks on the HEPA filters associated the Nederman collection units to be installed on future spray coaters (COMG 14). Water Gremlin contacted the manufacturer's representative who confirmed that such daily checks are not recommended or required, and in fact could lead to filter damage. Similar to the Nederman filters on the diecast machines, the Nederman collectors include pressure gauges that provide information on filter loaded and when filters should be changed. *See* a letter from Nederman representative on this issue attached as **Exhibit 6**.

III. Conclusion

On behalf of Water Gremlin, we appreciate the opportunity to provide comments on the Draft Permit. We reserve the right to request and incorporate the full record in this matter, including all documents, communications and materials of the MPCA, MDH, other state agencies and any third parties who worked on the Draft Permit, risk assessment, health benchmarks and related information. We request that the agency take appropriate steps to preserve and retain all such materials as part of the record, should any further proceedings be necessary.

Very truly yours,

DORSEY & WHITNEY LLP

Mark R. Kaster
Mark R. Drysdale
Paul K. Beck

MK
Enclosures:

Exhibit 1 – Petition for Contested Case Hearing

Exhibit 2 – Spreadsheet Summary of Water Gremlin Key Comments on Permit and Status of Resolution dated August 19, 2022

Exhibit 3 – Comments appended to Preliminary Draft Permit From

Exhibit 4 – Comments appended to Technical Support Document

Exhibit 5 – Stantec Technical Memorandum and Supplemental Memorandum from Dr. Deborah Gray

Exhibit 6 – Letter on Nederman HEPA filters

cc: Minnesota Attorney General's Office, Colin O'Donovan

BEFORE THE

MINNESOTA POLLUTION CONTROL AGENCY

In the Matter of Water Gremlin Company Draft Air Emission Permit No. 12300341-101	)	**Case No. _____**

Water Gremlin Company's Petition For A Contested Case Hearing Pursuant to Minn. Stat. Ch. 14 and Minn. R. 7000.1800 and 7000.1900

Commissioner Katrina Kessler
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

TO THE MINNESOTA POLLUTION CONTROL AGENCY:

Water Gremlin Company ("Water Gremlin"), by and through its undersigned counsel, hereby petitions the Minnesota Pollution Control Agency ("MPCA") for a contested case hearing pursuant to Minn. Stat. Ch. 14 and Minn. R. 7000.1800 and 7000.1900.

I. INTRODUCTION

1. Water Gremlin is the world's technological and market leader in the manufacture of lead battery terminals (used in most every car, truck, bus, recreational vehicle, industrial products and military equipment that incorporates a battery) and recreational fishing products.[1] The Company operates a 160,000 square foot manufacturing and warehousing facility at 4400 Otter Lake Road in White Bear Township (the "Facility"). The Facility is currently operating

[1] Water Gremlin uses recycled lead materials in its manufacturing process. This is lead material that would otherwise likely end up in a landfill, thus promoting recycled usage rather than disposal in keeping with the State's preferred waste management hierarchy. MN Stat. 115A.02.

under an air permit issued by the MPCA in 2006, as well as a March 1, 2019 Stipulation Agreement signed by Water Gremlin and the MPCA ("Stipulation Agreement") and a unilateral January 17, 2020 Administrative Order issued by the MPCA ("Administrative Order").

2. Water Gremlin filed an application for a Major Permit Amendment on October 23, 2018, and filed several rounds of supplemental information with the MPCA in the 2019-2022 time-period.

3. On July 20, 2022, the MPCA published a Preliminary Draft Air Emission Permit No. 12300341-101 ("Draft Permit") for public notice and comments. The Draft Permit and the accompanying Technical Support Document ("TSD") are together over 1,600 pages, and the MPCA has publicly stated its conclusion (well prior to any factual consideration of permit terms and conditions) that the agency intends to impose the most stringent permit possible.[2] This predicate instruction to staff (and we believe to the Minnesota Department of Health) led to a number of assumptions, misstatements and misapplication of facts in the Draft Permit. Among other things, the Draft Permit includes a Facility limit for annual emissions of the chemical *trans*-1,2-Dichloroethylene ("TDCE") of 32.6 tons per year. TDCE is an industrial solvent that Water Gremlin began using in 2019, based on the recommendations of the MPCA and the Minnesota Technical Assistance Program ("MNTAP") at the University of Minnesota, that TDCE was a safe and effective replacement for Water Gremlin's prior industrial solvent, trichloroethylene ("TCE").[3] TDCE is manufactured and widely used by some of Minnesota's

[2] Assistant Commissioner Craig McDonald's comments at a MPCA public meeting regarding Water Gremlin on December 10, 2020.

[3] Water Gremlin voluntarily agreed to change its operations to use TDCE, well before the state legislature enacted a law eliminating certain uses of TCE by companies operating in Minnesota per Minnesota Statutes, section 116.385.

largest companies and has never been classified as a hazardous air pollutant under the Clean Air Act.[4]

4. The MPCA calculated the 32.6 tons per year TDCE limit in the Draft Permit based on 2020 Risk Assessment Advice ("RAA") from the Minnesota Department of Health ("MDH"), which recommends a sub-chronic inhalation health benchmark for TDCE of 200 micrograms per cubic meter ($\mu g/m^3$), and a chronic inhalation health benchmark of 20 $\mu g/m^3$. This RAA has not been promulgated into state rule or peer reviewed, and neither Water Gremlin nor the public were afforded the opportunity to comment on the RAA before it was implemented in the Draft Permit. Importantly, the in-house MDH RAA is **not based on inhalation studies** (the exposure pathway applicable to Water Gremlin's permit), but instead is based on an ingestion-to-inhalation ("route-to-route" or "RTR") **extrapolation** of a chronic oral reference dose of TDCE developed by the State of California. Over the objections of Water Gremlin, the MDH and MPCA used this route-to-route extrapolated value rather than the United States Environmental Protection Agency's ("USEPA") 2020 published Provisional Peer-Reviewed Toxicity Value ("PPRTV") and associated Regional Screening Level ("RSL") for residential air, which is based on USEPA's review of inhalation toxicity studies and the agency's risk evaluation protocols.[5] As described further herein, MPCA used incorrect and unrepresentative factual data and applied that formulation in the Draft Permit for Water Gremlin.

5. Contrary to Minnesota Rules and agency guidance, the MPCA applied the MDH RAA *chronic* inhalation health benchmark for TDCE to determine the overall annual Facility

[4] *See* TDCE safety profile information such as that from 3M. 3M, "t-DCE: A safe, sustainable component in 3M Novec cleaning solutions," (June 2021), https://multimedia.3m.com/mws/media/811521O/trans-dce-trans-dichloroethylene.pdf. According to 3M, the safety profile of TDCE has been well characterized over the past 25 years.

[5] U.S. Environmental Protection Agency, "Provisional Peer-Reviewed Toxicity Values for *trans*-1,2,-Dichloroethylene," (Sept. 2020), https://cfpub.epa.gov/ncea/pprtv/recordisplay.cfm?deid=349934.

emissions limit in the Draft Permit, rather than the *sub-chronic* inhalation health benchmark. Under Minn. R. ch. 4717 and MDH guidance, air guidance values are developed to protect human health for a specific length of exposure. Sub-chronic exposure is defined as a period of more than 30 days, up to ten percent of a person's lifetime, or approximately eight years. In contrast, chronic exposure is an exposure over a period of greater than eight years, up to an entire lifetime.[6] MPCA's sole justification for applying the chronic exposure standard was Water Gremlin's historic use of TCE, and therefore the TCE-TDCE combination resulted in a chronic exposure duration. At the same time, however, MDH acknowledges that there is no known cumulative interaction between TDCE and prior TCE exposure.

6. Separately from the use of chronic exposure levels, the MPCA further adjusted the emission rate downward in Water Gremlin's Screening Risk Assessment Spreadsheet ("RASS"), so that the final endpoint-refined hazard index for TDCE calculates specifically to 1.00. The MPCA alleges that it was necessary due to the results of ambient monitoring for TDCE at the Facility. In fact, Water Gremlin's ambient monitoring shows that TDCE concentrations (365-day rolling averages) have been consistently below the unpromulgated RAA level of 20 $\mu g/m^3$ for the past two years of monitoring.[7]

---

[6] Minnesota Department of Health, "Air Exposure Durations," (April 2020), https://www.health.state.mn.us/communities/environment/risk/docs/guidance/air/airdurations.pdf.

[7] Despite a brief period where the 365-day rolling average for a single monitor (the agency does not use readings from all of the monitors) was calculated to be above 20.0 ug/m^3, the current individual 365-day rolling average is well below that level (14 ug/m^3 Monitor 2, period ending August 12, 2022). The other four monitors are all currently less than 10 ug/m^3 on a 365-day rolling average basis. Monitor 4 is typically the highest of the five monitors and its 365-day rolling average has been below 20 ug/m^3 since December 29, 2021. Notwithstanding the above noted results, the 365-day rolling average is not an appropriate time duration to compare against a chronic toxicity value. Note also that the monitor results likely reflect emissions from entities other than Water Gremlin. For example, the ambient monitoring detected TCE in air on several occasions after Water Gremlin discontinued its use and removed all TCE from its property, and a forensic analysis concluded that the TCE detections would not have been sourced from Water Gremlin. There are likely numerous other sources of chlorinated compounds in the area, but the MPCA attributes all monitored emissions (erroneously) to Water Gremlin. See, for example Hazardous Waste licensees in MPCA's 'What's In My Neighborhood' tool at

7. In addition to the above calculations, the MPCA reduced the Facility TDCE emissions limit in the Draft Permit by a further 16 percent based on the Facility's existing emissions, alleging that the modeling was under-predicting air concentrations. This is in spite of MPCA's requirement that Water Gremlin complete extensive modeling and maintain a strict tracking of all TDCE purchased and used at its facility. Water Gremlin disputes this claim, and there is a genuine issue of material fact as to whether the ambient air monitoring under-predicts air emissions at the Facility.[8]

8. The basis for Water Gremlin's petition is that the MPCA's proposed Facility limit for TDCE is without a factual foundation, was arbitrarily derived and is being applied to the Water Gremlin Facility using a combination of methods and factual conclusions that are contrary to MPCA and MDH regulations and guidance and the scientific record. Water Gremlin proposes to put forward experts and evidence demonstrating that the MPCA and MDH's TDCE value is improper and not supported by substantial evidence, including testimony from toxicologists and air emission modeling experts.[9]

9. In discussions with the MPCA regarding the pre-publication version of the Draft Permit, and now again in contemporaneously filed comments, Water Gremlin has proposed an

https://mpca.maps.arcgis.com/apps/webappviewer/index.html?id=9d45793c75644e05bac197525f633f87 (accessed Aug. 19, 2022).

[8] As the MPCA is fully aware, there are many reasons for ambient monitoring results to be higher or lower than modeled results, including for example, differences between modeled short-term weather conditions and actual weather conditions and/or contributions from sources beyond the facility. The data over the short term does not correlate to use of the 365-day rolling average monitoring data in the way presented by the MPCA. For example, the maximum 365-day rolling average from five monitors is currently 14.4 ug/m^3 (Monitor 4) for the period ending August 12, 2022. The 365-day total VOC usage for the same August 12, 2022 end date is 33.1 tons.

[9] Water Gremlin has engaged Dr. Deborah Gray as a consulting toxicologist. Dr. Gray's curriculum vitae was previously provided to the MPCA in prior comments on the Draft Permit submitted on April 22, 2022, which materials are incorporated herein by reference. Water Gremlin has also engaged modelling experts from Stantec, including Mr. Jared Anderson. Both Dr. Gray and Mr. Anderson would be expected to testify in the contested case proceeding.

alternative, enforceable, graduated emissions schedule, that would result in a **net reduction** in emissions of TDCE over the five-year term of the permit and a permanent reduction should Water Gremlin seek to renew the permit. Water Gremlin's proffered emissions schedule was structured to provide for emissions of 38.7 tpy and 36.5 tpy respectively for the first two years of the permit (but still within the MDH RAA guidance), followed by reduced emissions below the proposed permit limit for the remaining years and resulting in a net reduction of TDCE emissions over the five year permit term. This proposal was specifically directed to facilitate Water Gremlin's transition to ultraviolet-based coatings in its "Gremlin Green" environmental program, thereby **reducing** TDCE consumption well below even the erroneous risk levels used to establish the draft permit limits. The MPCA rejected the proposal, without a factual basis.

10. Lastly, the Draft Permit imposes three levels of TDCE monitoring. The second of these levels – in-stack monitoring – serves no factual purpose not already established by tracking of TDCE purchases and daily usage and ambient monitoring, and is not scientifically justified.

11. Pursuant to Minn. Stat. ch. 14 and Minn. R. ch. 7000, Water Gremlin therefore requests that a contested case hearing be held on the issues listed below.

II. ISSUES TO BE REVIEWED

12. Water Gremlin raises the following factual issues for review at the contested case hearing:

A. The scientific and factual justification for applying the MDH's RAA oral-to-inhalation extrapolated benchmark value to develop the Facility limit for TDCE emissions, rather than the USEPA's peer-reviewed inhalation PPRTV. This includes:

(1). Whether the MDH RAA is scientifically supportable; and

(2). Even if it is, whether the EPA PPRTV should take precedence as the more applicable, scientifically supported and justified, benchmark value.

B. The scientific and factual justification for using a chronic (i.e., lifetime) inhalation health benchmark for purposes of determining the Facility limit for TDCE emissions, based on prior TCE emissions.

C. The scientific justification for refusing to round Water Gremlin's final endpoint-refined hazard index for TDCE, consistent with MPCA policy in applying RASS evaluations.

D. The scientific and factual justification for adding an additional 16 percent safety factor to the facility TDCE limit, based on the alleged under-predicting of emissions by the ambient monitoring system.

E. The scientific and factual justification for rejecting Water Gremlin's proposed graduated, enforceable emissions reduction schedule.

F. The scientific and factual justification for continuing in-stack monitoring, in light of inventory controls, modeling, and ambient monitoring.

III. INTEREST OF THE PETITIONER

13. As the permit holder and applicant, Water Gremlin has a significant interest in obtaining a contested case hearing on the issues described above. The Facility TDCE emissions limit proposed in the Draft Permit would limit Water Gremlin's operations and its ability to serve its existing and future customers, and the ongoing monitoring requirements add significant cost to Water Gremlin, with no added benefit to the public.

IV. REASONS WHY A HEARING IS WARRANTED

A. There are Material Issues of Fact Regarding the Validity of the MDH RAA

14. The MDH based its initial 2020 RAA (MDH 2020a) on an oral-to-inhalation route-to-route conversion for TDCE, because at the time there was no EPA-approved reference concentration ("RfC") for TDCE. WG TSD Att. 9 at 5. The initial MDH RAA was extrapolated from the current (USEPA, 2010) oral reference dose (RfD) published on USEPA's Integrated Risk Information System (IRIS) webpage. *Id.* at 1. MDH updated its RAA later in 2020 (MDH 2020b), cutting the proposed limit in half, based on updated Benchmark Dose Software ("BMDS") modeling. *Id*. MDH asserts that in the absence of the RAA, Water Gremlin would

have been allowed to emit TCDE "without a tDCE protective air limit." *Id.* At the same time, "MDH acknowledges the limitations associated with RTR extrapolation." *Id.* at 5.

15. The MDH Air Toxicological Summary for: trans-1,2-dichloroethylene presents the equations they used to convert the CalEPA (2018) oral RfD to an air concentration. Although no appropriate references are cited for this conversion, MDH appears to have used a simplified formula and variable values from USEPA (1996) Soil Screening Guidance: Technical Background Document. Other than summarizing CalEPA's rationale for revising the TDCE oral RfD for California's Drinking Water Program, MDH does not explain what the acknowledged limitations of RTR extrapolation are, or what adjustments, if any, MDH made to account for those limitations. In addition, MDH's RTR extrapolation has not been peer-reviewed.

16. Water Gremlin will offer expert testimony by qualified toxicologists and witnesses, on the following methodological errors and limitations of the MDH RAA:

a. The Environmental Protection Agency very seldom engages in RTR extrapolation, because it is extremely difficult to perform such extrapolation reliably. The uncertainties associated with RTR extrapolation are often at least as great as the uncertainties, and magnify any limitations, associated with the underlying study on which the extrapolation is based.

b. To perform a reliable oral-to-inhalation RTR extrapolation, there must be both an in-depth *understanding* and an in-depth *explanation* of the relative toxicokinetics of the chemical administered through the oral and inhalation routes. MDH itself recognizes that sufficient toxicokinetic information must be available to support any attempted RTR

extrapolation.[10] This is explained in detail in (EPA 1996, *Soil Screening Guidance, Appendix B*; and EPA 1994, *Methods of Derivation if Inhalation Reference Concentrations and Applications of Inhalation Dosimetry*). MDH cites neither of the documents, nor any other resources regarding the protocols for performing RTR extrapolation. As a result, there is no evidence in the record by which to evaluate MDH's understanding of and adjustment for the relative toxicokinetics of TDCE for the oral and inhalation routes. They are nothing more than vague assertions about "marginal" similarities in the effects shown by the oral study relied on by MDH and the results of the inhalation study relied on by EPA. *See* WG Att. 9 at 6-7.

c. The RTR extrapolation was performed in-house by MDH, and no record of peer review by MDH staff or outside reviewers has been provided. The absence of external peer review does not provide confidence in the assumptions used by MDH in performing the RTR.

d. In addition to these specific problems with MDH's RAA, Water Gremlin will offer testimony on the significance that EPA did not do an RTR extrapolation for TDCE at any time during the period from 2010-2020, when there was no inhalation toxicity Reference Concentration available. The Shopp study relied on by MDH and other oral exposure studies were fully available during this period, and having an inhalation toxicity value would have been useful in a number of contexts. The fact that EPA did not

[10] Minnesota Department of Health, "Statement of Need and Reasonableness, proposed Permanent Rules Relating to Health Risk Values," at 10-11 (August 2001).

do an RTR extrapolation is strongly indicative that EPA did not believe one could be reliably performed for TDCE based on the study data and toxicokinetic information available.

e. For these reasons, Water Gremlin's toxicologist will testify that the MDH RAA does not provide a reliable basis on which to derive a permit limit for TDCE. In addition, a contested case is necessary to assist the MPCA in determining what protocols were employed to ensure the reliability of the MDH RAA, in the event that the MPCA intends to rely on the MDH RAA for establishing the Water Gremlin TDCE permit limits.

1. There are Material Issues of Fact As to Whether the EPA TDCE PPRTV Provides a Superior Benchmark for Setting Water Gremlin Permit Limits to the MDH RAA.

17. Independently of the unreliability of the MDH RAA, a more technically defensible inhalation toxicity benchmark is available. In September 2020, EPA established Provisional Peer-Reviewed Toxicity Values ("PPRTV") for TDCE through the inhalation route of exposure. The chronic inhalation PPRTV is 40 $\mu g/m^3$. MDH claims it considered and rejected the EPA PPRTV "when it was publicly released." WG TSD Att. 9 at 5. MDH rejected the EPA PPRTV in favor of its updated RAA derived from Cal-EPA's oral toxicity value using RTR.

18. MDH states four reasons for rejecting the EPA (2020) PPRTV:

a. The EPA (2020) PPRTV is based on a DuPont 1998 inhalation study, which EPA determined in 2010 was insufficient to establish an RfC, because of "toxicologically questionable endpoints." WG TSD Att. 9 at 5.

b. The DuPont 1998 study was not peer reviewed. *Id.*

c. *"*MDH considered the Shopp et al. 1985 drinking water study to be superior for tDCE as it reports on a specific challenge and response to the rodent

immune system and not just a standard blood count panel as in Dupont 1998." *Id.,* and

d. the drinking water pathway represents a more continuous internal exposure to the rodent rather than a six-hour episodic exposure occurring five days per week where recovery over 18-hour periods and weekends is likely." *Id.*

19. Water Gremlin's toxicologist and other witnesses will testify that none of these are satisfactory reasons for rejecting the EPA PPRTV in favor of the MDH RAA. Specifically:

a. The uncertainty regarding toxicological endpoints reported in the DuPont 1998 study was addressed in the 2020 EPA re-evaluation conducted to support derivation of an inhalation PPRTV. EPA resolved these issues by selecting the apparent dose-related critical effect from the DuPont study and applying updated BMDS software (in the same way that MDH applied updated BMDS software in re-evaluating the MDH RAA in 2020). In fact, EPA specifically concluded that the DuPont 1998 study met **all** the requirements for use in developing a provisional RfC, with the sole exception that the DuPont 1998 study was not peer-reviewed. Consequently, the 2020 inhalation PPRTV was designated as a screening level p-RfC.

b. Lack of peer review of the key study (DuPont 1998) relied upon by USEPA (2020) is not a valid reason for preferring the MDH RAA over the EPA PPRTV, because the MDH RAA is not itself peer-reviewed.

c. Any minor incremental value provided by the specific immune system challenge conducted in the Shopp study is overwhelmed by the limitations

and uncertainties associated with conversion of oral exposure to inhalation exposure. Throughout its memorandum, MDH compares and contrasts the underlying studies (Shopp 1985 oral and DuPont 1998 inhalation) without acknowledging that differences in study design and measures of effect do not detract from the DuPont study's direct relevance to deriving a RfC for inhalation of TDCE in ambient air and superior applicability to an inhalation exposure context.

d. MDH is correct that a drinking water exposure is a more continuous exposure than inhalation, but this is simply another example of the problems with RTR extrapolation. Inhalation toxicity values (RfCs and Inhalation Unit Risk Concentrations) are derived using assumptions that a person is continuously exposed to that concentration in air. No adjustments are made for intermittent exposures. No off-site person will ever be continuously exposed, or even consistently exposed, to emissions from the Water Gremlin facility, if for no other reason, because of the variabilities of wind transport. Regardless, the continuous exposure provided in the Shopp study is not an advantage of that study over the DuPont study, because inhalation results are adjusted to reflect an assumption of continuous exposure.

2. Even if route-to-route extrapolation were reliable, the MDH did not follow its own hierarchy of inhalation health benchmarks.

20. The TSD indicates that the MDH RAA of 20 $\mu g/m^3$ was used to determine the overall facility limit for TDCE based on a "hierarchy for toxicity value information sources" agreed upon by the MPCA and MDH. The TSD posits that because MDH toxicity values are first

in the hierarchy, the MPCA applied the MDH RAA value. This hierarchy is included in MPCA guidance on Air Emissions Risk Analysis published online[11] and is as follows:

1. MDH Health-Based Values and Risk Assessment Advice for Air
2. MDH Health Risk Values
3. USEPA Integrated Risk Information System ("IRIS")
4. California Environmental Protection Agency ("CalEPA") Reference Exposure Levels and Cancer Potency Values
5. PPRTVs derived by USEPA's Superfund Health Risk Technical Support Center (STSC) for the USEPA Superfund program

21. While an MDH RAA is higher in the benchmark hierarchy than USEPA IRIS and PPRTV values, the MDH itself did not follow the guidance hierarchy in developing its site-specific RAA for the Water Gremlin facility. Initially, in 2019, the MDH determined a chronic RAA value for TDCE of 70 $\mu g/m^3$, based on an RTR extrapolation of the chronic oral reference dose provided by USEPA IRIS. However, in 2020, the MDH discarded the USEPA IRIS chronic oral reference dose in favor of a chronic oral reference dose developed by CalEPA,[12] which ranks *lower* in the hierarchy than USEPA IRIS. MDH justified this departure based on CalEPA's criticisms of the USEPA RfD, but the mechanism for such review and adjustment is through the IRIS process, rather than selective reliance on lower-ranked benchmark sources. This is illustrative of the cherry-picking of data and methods exhibited by MDH throughout the Water Gremlin RAA process. In addition to the violation of MDH's own guidance, there is a material issue of fact as to whether

[11] Minnesota Department of Health, "Air Emissions Risk Analysis (AERA) Guidance," at 29 (Feb. 2019), https://www.pca.state.mn.us/sites/default/files/aq9-18.pdf.

[12] *See* Minnesota Department of Health, "Air Toxicological Summary for: trans-1,2-dichloroethylene," at 3 (May 2020), https://www.health.state.mn.us/communities/environment/risk/docs/guidance/air/tdcesumm.pdf.

the USEPA IRIS RfD is a more scientifically reliable standard than the CalEPA RfD, and Water Gremlin's toxicologist will testify why the USEPA IRIS RfD is factually best suited for the risk assessment.

3. MDH'S Qualitative Reasons for the RAA Standard are Not Scientifically Sound

22. MDH further justifies its RAA RTR extrapolation based on three qualitative factors:

a. The community near Water Gremlin was exposed to TCE emitted from the Water Gremlin facility for years prior to Water Gremlin's switch from TCE to TDCE, and the TDCE exposure may be cumulative of the TCE exposure because both are industrial chlorinated solvents, WG TSD Att. 9 at 5;

b. Covid-19 may exacerbate the effects to TDCE exposure, *Id.* at 7; and

c. Protection of public health is of the "utmost priority." *Id.* at 5.

23. There are material disputes of fact as to whether any of these are scientifically valid reasons to select the MDH RAA over the USEPA PPRTV. Specifically, Water Gremlin's toxicologist will testify:

a. MDH itself admits that there is no known interaction between TCE and TDCE exposure. ("The health effects of a chronic TCE exposure followed by tDCE exposure are unknown at this time." *Id.* at 7). Toxicokinetically, there is also no reason to believe that any effects of TDCE are cumulative of those with prior TCE exposure. Both TCE and TDCE are quickly eliminated from the body and do not bioaccumulate. MDH does not provide evidence that exposure to the low levels of TDCE measured in

ambient air at Water Gremlin's monitoring locations increases the inferred risk to the surrounding community. In fact, in their April 2022 Water Gremlin Public Health Assessment: Public Comment Draft, MDH concludes that "*past or current t-DCE…air emissions are not expected to harm people's health*."

b. MDH asserts that the RAA was released at a time when Minnesota was "besieged by Covid-19." *Id.* at 7. MDH is clearly justifying the RAA based on the uncertainty surrounding Covid-19 at that time, when vaccines and treatments for Covid-19 did not exist and there was great uncertainty about even the mechanisms of Covid-19 transmission. That uncertainty has since been much reduced through the developments of vaccines, treatments, and effective exposure controls. MDH also now admits that there is no known interaction between TDCE and Covid-19. *Id.* at 7. None of the studies referenced by MDH support such an inference. Furthermore, the studies referenced by MDH were available as of April 2022 when the Water Gremlin Public Health Assessment: Public Comment Draft was released, but were not cited in that document. It is therefore rank speculation for MDH to conclude that there would be any interaction between TDCE emissions in compliance with the EPA PPRTV and any incidence of Covid-19, and Water Gremlin's toxicologist will testify to that effect. MDH's invocation of its general interest in public health is not a scientifically valid reason to choose the MDH RAA over the EPA PPRTV. Public health is relevant to all chemical exposures and the

development of all RfC's, RfD's, and PPRTVs. MDH fails to acknowledge all the many uncertainty and protective adjustments that are incorporated as a matter of course in the development of any of these values. EPA follows a rigorous process to develop toxicity values. Once the key study and critical effect have been identified, a Point of Departure (POD) is determined for derivation of the RfD or RfC (for non-cancer health effects). Depending on the study design, particularly the number of dose levels evaluated, the POD is determined for a response that is different in exposed humans or animals compared to unexposed (control) subjects. In the case of TDCE, there were enough dose levels in the drinking water study by Shopp et al. 1985 and the inhalation study by DuPont 1998 for EPA to use Benchmark Dose Modeling Software (BMDS) to determine the POD. The POD dose is then adjusted downward by the application of uncertainty factors to account for limitations in the database such as: inferring the effects of chronic exposure from a subchronic study; extrapolating from an animal study to humans; variability and sensitivity of the human population; and number and quality of available studies. For TDCE, the chronic oral RfD and chronic screening level p-RfC are **3,000 times LOWER** than the lowest exposure levels that produced a response in the experimental animals.[13] The low RfD and RfC values are a function of the limited database and should not be interpreted to infer the toxicity of TDCE. Because the public health is

[13] *See* EPA PPRTV for TDCE at 43, Table A-2.

already a priority and was considered throughout the development of the EPA PPRTV, that priority does not provide an additional and independent qualitative reason to select the MDH RAA.

B. The MDH Improperly Applied a Chronic Inhalation Health Benchmark

24. The Draft Permit contains an enforceable limit of 32.6 tons per year of TDCE emissions, based on the MDH chronic inhalation RAA health benchmark of 20 $\mu g/m^3$. According to the TSD, the MPCA utilized the chronic health benchmark "in consideration to [sic] the extended prior unpermitted exposures of this community."[14] The Draft Permit and the supporting documents do not, however, allege (1) any prior unpermitted emissions of TDCE, or (2) any connection between historic TCE emissions and future TDCE emissions. In fact, the MDH admits that there is no known cumulative interaction between TDCE and prior TCE exposure. WG TSD Att. 9 at 7. Consequently, MPCA has not articulated a valid reason to apply a chronic standard over a subchronic standard.[15]

C. The MPCA Improperly Disallowed Rounding of the Endpoint Hazard Index

25. In addition to evaluating individual emissions, the MPCA routinely calculates a facility-wide hazard index through the RASS, in which it assigns values to the hazards associated with each pollutant emitted to derive a total numeric value for the facility. This becomes the "Facility-wide Endpoint Hazard Index for the Facility," and can result in adjustments to emissions limits over-and-above those that would be allowed on a pollutant-by-pollutant basis. Minn. Rules 4717.8600 describe the procedure for calculating a facility's hazard index. Subpart 2(D) states: "A hazard index of one or less indicates a combined concentration of chemicals

[14] TSD at 41.

[15] We note that Water Gremlin proposed a TDCE limit over the life of the permit that is well below any chronic or sub-chronic risk derivation, and this was rejected by the MPCA.

unlikely to cause an adverse health effect to the general public." Because this is an inherently crude and overprotective exercise, the MPCA's normal process is to calculate to one significant digit. In practice, values between 1.01 and 1.49 round to 1, values between 1.51 and 1.99 round up to 2. Water Gremlin's facility-wide endpoint hazard index, even using MDH's RAA, would round to 1, and at that level Water Gremlin's emissions limits would require no further adjustment. Water Gremlin's facility-wide emissions limit for TDCE would have been 51.2 tons per year.[16]

26. MPCA departed from this practice in the case of Water Gremlin. MPCA refused to allow any rounding for a facility-wide Hazard Index, and furthermore applied a TDCE-specific endpoint hazard index of 1.0 (no rounding).[17] As a result, Water Gremlin's TDCE emissions limit was preliminarily lowered to 38.7 tons/year.

27. MPCA's only justification for this change in protocol is the extent of Water Gremlin's historic emissions. This is not scientifically or factually justifiable, for the following reasons:

a. The facility-wide hazard index process is intended to address a facility's *prospective* emissions over a range of pollutants; there is no process, standards, or guidance for further adjusting the index on the basis of historic emissions. Should MPCA wish to add a historic-emissions adjustment to the index development process, it should develop a new rule

[16] This petition disputes the MPCA's factual underpinnings and basis for the limitations set forth in the Draft Permit. Under the MPCAs normal protocols using consistent applications of facts, science and law, Water Gremlin's permit limit would be no less than 51.2 tons per year. Notwithstanding, Water Gremlin has offered to voluntarily limit its TDCE usage (using the MDH RASS recommendation) and has agreed to a graduated reduction of TDCE emissions to less than 20 tpy during the life of the 5 year permit. Indeed, Water Gremlin's proposed usage of TDCE over the 5-year life of the permit is well below that allowed in the Draft Permit. See further discussion in text.

[17] TSD at 43.

or guidance to govern the RASS process. MPCA simply made up and applied such an adjustment to Water Gremlin by fiat.

b. The principal historic emissions of concern are for TCE, a chemical no longer in use at Water Gremlin. As previously explained, there is no scientific basis for adjusting the limits for TDCE emissions based on historic TCE emissions.

c. To the extent the MPCA relies on the historic emissions of other pollutants besides TCE for the departure from protocol, there is even less scientific basis for such an adjustment. The MPCA has not explained the toxicokinetic basis for an adjustment based on the historic emissions of any other pollutant by Water Gremlin, and Water Gremlin's toxicologist will testify that there is none.

D. The MPCA Improperly Added a 16 Percent Safety Factor to the Facility TDCE Limit

28. After adjusting the RASS to reflect its rounding and TDCE-specific endpoint hazard index decisions imposed on Water Gremlin, MPCA made a further reduction to its proposed limit, in an apparent attempt to calibrate the limit derived from its risk modeling procedure above (38.7 tons per year) further downward by using the ambient monitoring data that had been generated over the prior two-plus years.[18] That is, the ambient monitoring data showed only a brief period whereby the 365-day rolling mean concentration between approximately November 9, 2021 and January 8, 2022 (based on one monitor) was in excess of MDH's RAA of 20 $\mu g/m^3$. MPCA paired the 365-day rolling VOC tracking required by the Administrative Order with this data and determined that the 365-day rolling emissions total,

[18] TSD at 43.

when the ambient monitors demonstrated a 365-day mean concentration above 20 μg/m^3 (November 9, 2021), was approximately 32.6 tons per year VOCs (as of November 6, 2021). MPCA used this pairing to arrive at its adjusted TDCE limit of 32.6 tons per year, citing the approximate 16% reduction (i.e., from 38.7 tons per year to 32.6 tons per year) as "appropriate based on the weight of the evidence provided by actual ambient air measured concentrations of t-DCE around the facility and the associated t-DCE usage at the facility."[19] Water Gremlin has several objections to this adjustment:

a. The method used by MPCA is completely arbitrary and amounts to an indefensible leap. There is no linear relationship or direct connection between TDCE usage (tons per year) and ambient concentration (micrograms per cubic meter). While partially dependent on emission levels, the concentrations observed at any one ambient monitor location or point in time are also a function of wind speed and direction for the time-period of interest. The inability to scale stack emissions directly to ambient concentrations is why risk modeling is normally conducted using an EPA-approved dispersion model coupled with five years of NWS hourly weather observations. The variability in weather patterns possible for a given area are deemed to be sufficiently represented by five years of representative hourly weather data. Using such data under MPCA's typical risk modeling procedures, the maximum calendar year average result for any one receptor in the grid (among hundreds or thousands) is then used as a surrogate for maximum exposure and limits are set on this basis.

[19] TSD at 43-44.

b. MPCA's adjustment method is further cast into question due to other occasions whereby 365-day VOC usage levels in excess of 32.6 tons per year resulted in 365-day rolling concentrations well below 20 $\mu g/m^3$ (e.g., Summer 2021, Summer 2022). Using MPCA's pairing method, one could infer that higher usage levels could be supported at different times of the year. This is not being proposed by Water Gremlin; instead, it simply shows that MPCA's arbitrary selection of one monitoring event in November 2021 to set an annual limit is not mathematically defensible.

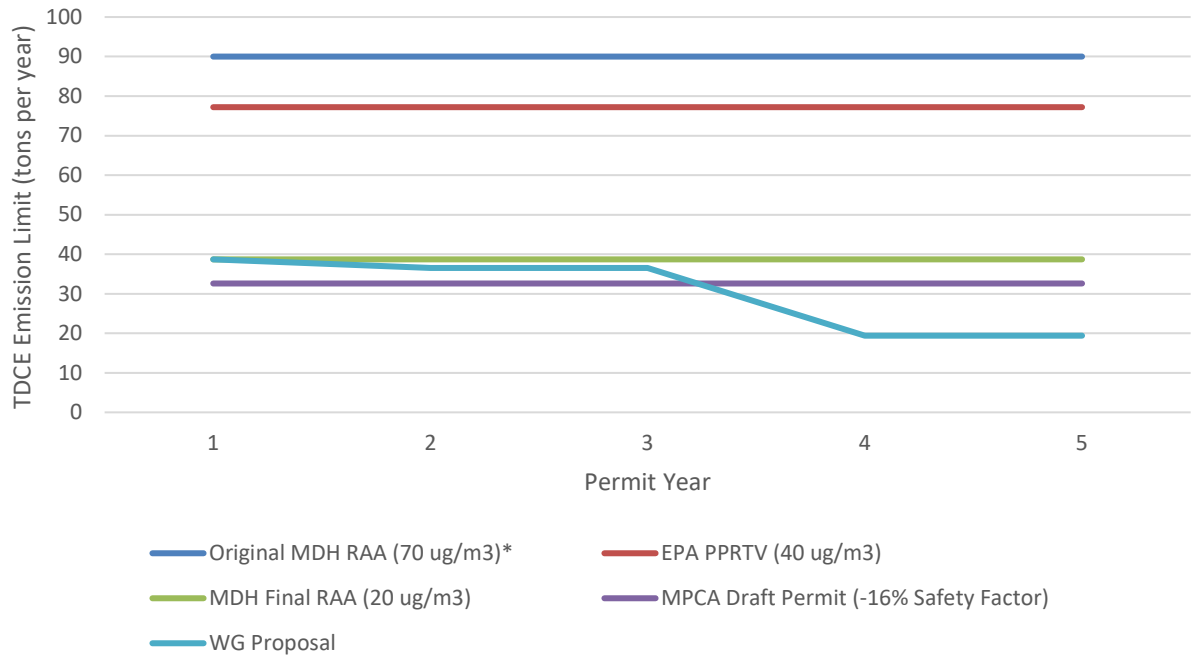
c. MPCA states that it "must be noted that there are no other known sources of t-DCE around the Water Gremlin facility other than Water Gremlin itself." While none are known of, this does not negate the possibility of such sources existing in the area. For example, reviewing MPCA's 'What's In My Neighborhood' tool, various hazardous waste licensees are located in the region. It is certainly plausible that such businesses (such as auto dealers, cleaners or others solvent users) ceased usage of TCE under Minnesota's ban and found TDCE as an acceptable alternative based on prior guidance by MNTAP to businesses, in exactly the same manner as occurred with Water Gremlin. The MPCA's presumption that there are no other sources is therefore unsound.

E. There are Material Disputes of Fact as to Whether Water Gremlin's Proposed Alternative TDCE Emissions Schedule is More Protective of Public Health Than the Emissions Limits in the Draft Permit.

29. As explained, there is no scientific justification for imposing a TDCE permit limit below the EPA PPRTV chronic inhalation standard of 40 $\mu g/m^3$, which translates to an annual tonnage limit of 77.2, or 38.6 tons over the five-year duration of the permit. Nevertheless, Water

Gremlin proposed to the MPCA that it would be prepared to accept a reduced emissions schedule as a binding term of the permit. The following figure provides a comparison of how the TDCE limit has been viewed, and how Water Gremlin's proposal is justified based on the science and facts, and results in reduced emissions over the life of the permit.

Figure 1: Comparison of Proposed Water Gremlin Facility TDCE Emissions Limits (tons per year)



* The original RAA of 70 µg/m^3 could have afforded TDCE usage up to proposed Total VOC minor source permit limit of 90 tons/year.

30. This Figure compares the total amount of TDCE allowed under the Draft Permit (163 tons based on 32.6 tpy for 5 years) verses Water Gremlin's proposal (see paragraph 9 above) that would actually reduce total emissions by over 12 tons over the life of the permit beyond what even the MPCA contends can be lawfully emitted. Thus, the Water Gremlin proposal would actually reduce allowable TDCE emissions by almost 50% by the end of the permit term (38.7 tpy down to 19.4 tpy), but this was rejected without any factual analysis or

consideration of risk reduction by the agency. There is no legal prohibition on providing for a graduated emissions schedule in a permit in lieu of the straight-line set of limits. MPCA nevertheless rejected Water Gremlin's proposed alternative emissions schedule. MPCA's sole rationale for rejecting the schedule was the contention that emissions can never be allowed to exceed the 32.6 ton annual limit derived from the MDH RAA. As explained in this petition, there is no scientific justification for this position and a contested proceeding is critical to help evaluate the facts for a fair and fully informed permit decision.

31. In addition, to the extent that the MPCA credits any of the MDH's stated qualitative reasons for the applying the MDH RAA (historic emissions of TCE, theorized interaction with Covid-19, and an over-riding priority to protect public health), then Water Gremlin's proposed emissions schedule is superior to that proposed in the Draft Permit. Water Gremlin's schedule would result in reduced net emissions, and would be more protective of the public health than the TDCE emissions limit in the Draft Permit. These benefits compound to the extent the permit extends beyond the initial 5-year term, as Water Gremlin would be emitting over 11 tons per year less of TDCE than under the Draft Permit conditions. Consequently, there is a disputed issue of material fact as to whether Water Gremlin's proposed alternative schedule is equally or more protective of public health that the limits in the Draft Permit, under the MPCA's own permitting assumptions.

F. There is No Scientific Justification for In-Stack Monitoring and the Provisions for Discontinuing Ambient Monitoring are Unworkable

32. The Draft Permit imposes three levels of emissions monitoring for TDCE: (1) inventory tracking and management of TDCE, (2) in-stack monitoring, and (3) ambient monitoring. The in-stack monitoring serves no legitimate purpose, and indeed confuses tracking of TDCE emissions because it measures Total Hydrocarbons and attributes any molecules

containing carbon toward a concentration as TDCE emitted.[20] Inventory tracking and management results in clear monitoring and record-keeping of actual TDCE use and emissions. Ambient monitoring is specific to TDCE, and demonstrates levels detected at the property line. Although ambient monitoring may be over-predictive of actual emissions from Water Gremlin because of potential off-site sources of TDCE, it provides an environmental "check" for actual emissions of TDCE, not Total Hydrocarbons.

33. In contrast, in-stack monitoring provides no additional information, and because the in-stack monitor only detects hydrocarbons, rather than TDCE, it frequently overstates TDCE emissions. More importantly, over three years of in-stack monitoring data have been collected. Water Gremlin first started operating its Total Hydrocarbon (THC) monitor on May 1, 2019 with evaluations required for each day in which coating operations were conducted. Under the terms of the January 17, 2020 Administrative Order, Water Gremlin was required to continue operation of this THC monitor. This monitoring data has never revealed any systemic issues with Water Gremlin's daily VOC/solvent usage tracking. With that extended dataset, and the inherent inaccuracy of the in-stack monitoring, in-stack monitoring confuses rather than illuminates emissions. Rather than discontinue in-stack monitoring started under the Administrative Order and instead rely on modeling as is typically done with permits, the MPCA instead proposes to increase the requirements by establishing daily reporting and auditing procedures. Recognizing the inaccuracy of the data, the MPCA attempts to correct for that by establishing "compliance bands" purporting to restrict the circumstances under which further auditing is necessary. But this attempted fix does not address the demonstrated fact that in-stack monitoring is less accurate than the dataset it is designed to check.

[20] TSD at 37.

34. In addition, Water Gremlin disputes whether the in-stack monitoring provides any useful information for maintaining compliance with the permit. Stantec witnesses will testify that the requirement provides no value, and a contested case is necessary resolve this issue.

35. The draft permit contains provisions for discontinuation of ambient VOC monitoring at Permit Item 5.1.57. The discontinuation provisions are unworkable as a practical matter, for the following reasons:

a. The facility must continue ambient monitoring for at least 24 additional months once the permit is issued. Water Gremlin inquired with MPCA staff about receiving credit for having collected identical data for over two years already and was denied. This is not equitable and there is no factual basis for MPCA's arbitrary decision.

b. Two paired provisions are also required to be satisfied in order for discontinuation of the ambient monitoring:

1. Water Gremlin must be operating with TDCE emissions at least 80 percent of the permitted limit. This is counter-intuitive and counterproductive to require a high level of solvent usage to discontinue ambient monitoring when Water Gremlin has already proffered a schedule of TDCE emissions that would result in lesser TDCE emitted under Water Gremlin's proposal than under MPCA's draft permit. The requirement also runs counter to the permittee's stated intention and proposed authority under the draft permit to convert additional solvent-based coaters to UV-cured coaters, having no TDCE emissions.

2. A novel test is prescribed for predicting whether future long-term average concentrations will be above health guidelines, specifically that the 95 percent upper confidence limit of ambient concentrations are below 80 percent of the MDH health benchmark limit, while simultaneously pre-conditioning high solvent usage under 1) above. This condition is not based on sound science.

V. RELIEF REQUESTED

36. For the foregoing reasons, Water Gremlin requests a contested case to ensure that the record is fully developed and to resolve the numerous material disputes of fact between the MPCA, MDH, and Water Gremlin.

Dated: August 19, 2022

DORSEY & WHITNEY LLP

By: */s/ Mark R. Kaster*
Mark R. Kaster (Bar #0157519)
Michael R. Drysdale (Bar #0257606)
Paul K. Beck (Bar #0396892)

50 South Sixth Street, Suite 1500
Minneapolis, MN 55402-1498
Telephone: (612) 340-2600
kaster.mark@dorsey.com
drysdale.michael@dorsey.com
beck.paul@dorsey.com

Attorneys for Petitioner Water Gremlin Company